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The American Grove.

for my learned friend

the worthy Professor Schröter

at

Erlangen.

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ARBUSTRUM AMERICANUM:

THE

AMERICAN GROVE,

OR, AN

ALPHABETICAL CATALOGUE

OF

FOREST TREES AND SHRUBS,

NATIVES OF THE AMERICAN UNITED STATES,

ARRANGED ACCORDING TO THE LINNÆAN SYSTEM.

CONTAINING,

The particular distinguishing *Characters* of each GENUS, with plain, simple and familiar *Descriptions* of the *Manner of Growth*, *Appearance*, &c. of their several SPECIES and VARIETIES.

ALSO, SOME HINTS OF THEIR USES IN
MEDICINE, DYES, AND DOMESTIC OECONOMY.

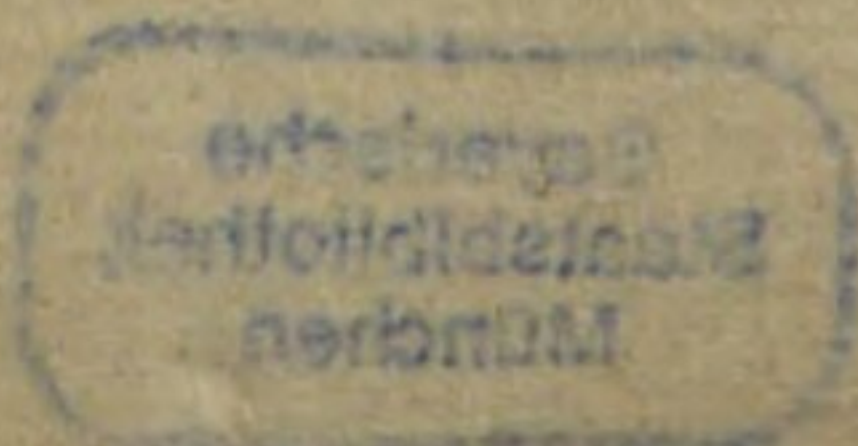
COMPILED FROM ACTUAL KNOWLEDGE AND OBSERVATION, AND
THE ASSISTANCE OF BOTANICAL AUTHORS,

BY HUMPHRY MARSHALL.

P H I L A D E L P H I A :

PRINTED BY JOSEPH CRUKSHANK, IN MARKET-STREET, BETWEEN
SECOND AND THIRD-STREETS.

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MEDICINE, DYES, AND DOMESTIC USES OF COTTON

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BY HENRY MARRIOTT

PUBLISHED

PRINTED BY JAMES GORDON, IN MARKET STREET, BETWEEN
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1842

Bayerische
Staatsbibliothek
München

T O

BENJAMIN FRANKLIN, ESQUIRE,

P R E S I D E N T,

JOHN EWING, D. D.

WILLIAM WHITE, D. D. and } *Vice-Presidents,*

SAMUEL VAUGHAN, Esquire, }

A N D

TO THE OTHER MEMBERS

O F T H E

AMERICAN PHILOSOPHICAL SOCIETY,

T H I S

ALPHABETICAL CATALOGUE

O F T H E

FOREST TREES AND SHRUBS,

NATIVES *of the* AMERICAN UNITED STATES,

IS RESPECTFULLY DEDICATED

BY THE AUTHOR.

BENJAMIN FRANKLIN, Esquire,

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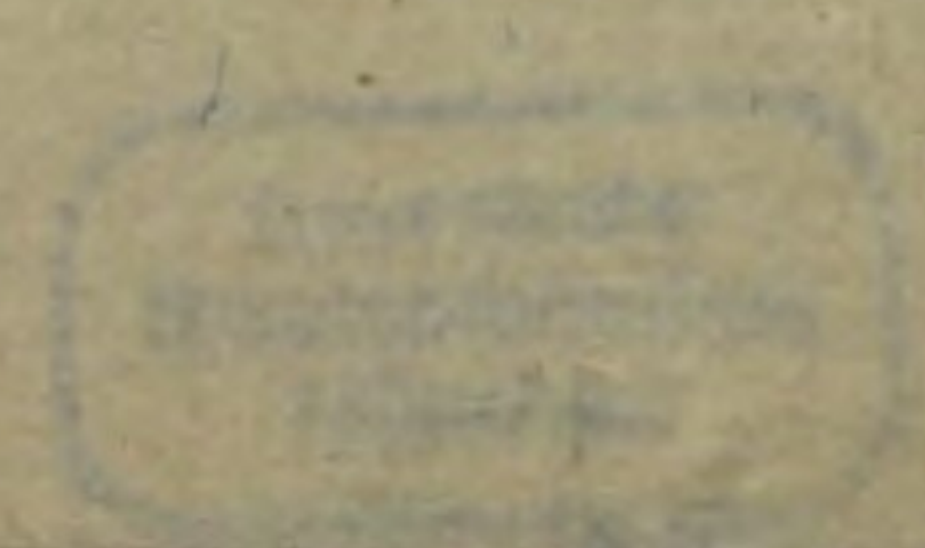
OF THE

FOREST TREES AND SHRUBS,

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BY THE AUTHOR.



INTRODUCTION.

WHEN we take a survey of Mankind in general, and of the several requisites by which life is rendered comfortable and desirable, the productions of the Vegetable Kingdom are amongst the foremost; as affording the principal necessaries, conveniences, and luxuries of life.

It is in this view, that the Science of Botany, or that branch of natural History which teaches the right knowledge of Vegetables, and their application to the most beneficial uses, is an object which not only merits the attention and encouragement of every patriotic and liberal mind, but undoubtedly deserves a place amongst the first of useful pursuits. That it is an object highly deserving the attention of Mankind in general, cannot be denied; but in a particular manner of the inhabitants of this Commonwealth, the author wishes to make appear more obvious.

Those who are conversant in trade well know the continual enormous expence we are at in purchasing foreign Teas, Drugs, Dye-stuffs, &c. The diminution of this, ought to be the care and concern of every friend to his Country's welfare. And we presume it will appear evident, that the most eligible and obvious means

means of obtaining this desirable object, will be by a proper attention and application to Horticulture and Botany. In this view, the following considerations more particularly present themselves.

I. *The introduction and cultivation of foreign useful and valuable plants.* Our extent of territory, our diversity of Climate, of Soil, and of Stuation, leaves not a doubt but that we might introduce and cultivate to advantage, many of the same articles, whose importation at this time, is to us, a considerable expence. The *Thea viridis* & *bohea*, the true green and bohea Tea plant, formerly accounted different species, but now known to be the same, and one of the greatest drainers of our wealth; may be procured either from its native place of growth, or from Europe where it has become pretty common; and we have every reason to believe, from its being the spontaneous produce of the same parallel of latitude, and from other considerations respecting its natural history, that it might thrive well in our Southern States. In this same view the Vine, the Almond Tree, Fig Tree, Liquorice, Madder and Rhubarb, deservedly require our attention. Many other* foreign useful plants might be enumerated, and the advantages that may be derived to this Commonwealth from their introduction, encrease and culture, must appear sufficiently obvious.

* See Transactions of the American Philosophical Society, Vol. I. Page 155.

II. *The discovering the qualities and uses of our own native Vegetable productions, and applying them to the most useful purposes.* Our extent of luxuriant unexplored territory, is an object which here in a particular manner occurs replete with promising advantages. Our being able to discover a plant of equal general usage with the *Potatoe*, *Tobacco*, or *Ginseng*; or good substitutes for *Tea*, *Coffee* and *Peruvian Bark*; would be advantages surpassing all adequate estimation.

It is true, we may gain by tedious experience, or stumble by chance upon many useful discoveries respecting the uses and medicinal virtues of plants, but it is from our observations and researches founded upon, and directed by, a *knowledge of Botany*, that we can alone hope for certain success. From the writings of the celebrated LINNÆUS this general rule is sufficiently established; that plants of the same habit and appearance, and those which agree in the disposition of their flowers and fruit, have likewise similar virtues and properties. From this observation we deduce an obvious inference; that the more general knowledge we obtain of the characters and appearance of plants, the more likely we shall be also to encrease our knowledge of their virtues, qualities and uses.

This subject has been much urged and long dwelt upon from a conviction of its importance and promising advantages: the author, influenced by these considerations, and from a belief

a belief that it might contribute in some degree to render a knowledge of this subject more familiar and easy, has been induced to draw up this Alphabetical Catalogue of the Forest Trees and Shrubs, natives of the American United States, as mentioned by the best authors, or since discovered by ingenious travellers. In this Catalogue are contained their Linnæan Generic and trivial names, (or new formed ones where these have been wanting) together with their most common and approved English ones; the particular distinguishing characters of each Genus; a plain and familiar description of the appearance, manner of growth, &c. of their several species and varieties; and also, some hints of their native soil and situation, uses in Medicine, as Dyes and in domestic œconomy.

As terms peculiar to the science frequently and unavoidably occur, it was judged necessary, in order to render the work more useful and complete, to prefix a general explanation of the Linnæan system of arrangement, as also of the useful and unavoidable scientific terms; for this and other purposes the author has availed himself from the best writers, of what has been judged most applicable and conducive to his design. The whole forming an useful *Vademecum Botanicum*, or Botanical Companion.

In this my *Countrymen* are presented at one view with a concise description of their own native Forest Trees and Shrubs, as far as hitherto discovered. And those whose fancy
may

may lead to this delightful science, may by a little application, from hence be enabled scientifically to examine and arrange, not only those of the shrubby, but the several and various species of the herbaceous class. The *foreigner*, curious in American collections, will be hereby better enabled to make a selection suitable to his own particular fancy. If he wishes to cultivate timber for oeconomic purposes, he is here informed of our valuable Forest Trees: if for adorning his plantation or garden of our different ornamental flowering shrubs.

The author would have been happy, could he have given also a descriptive Catalogue of our native herbaceous plants. At present, circumstances oblige him to confine himself to Forest Trees and Shrubs; however he has such a work in contemplation should this meet with the encouragement of the public.

He is well aware that many improvements might have been made, with regard to the form and manner of description, as well as by the addition of Synonyms, Notes of reference, &c. but, upon reflecting that the generality of his Readers would have been more embarrassed and confused than profited thereby, he was determined to use the most plain and familiar method and language, in order to render the work as generally useful as possible; this being the chief end and design of the undertaking.

A View of the Twenty-four Classes of the SEXUAL SYSTEM of LINNÆUS, with their Names and Characters; also the Number and Explanation of Orders contained in each.

Number of the Classes.	Their Names and Characters.	Number of Orders in each.	Their Names, expressive of the Number of Female Parts or Styles.	Number.
1.	MONANDRIA. One fertile stamen, i. e. having the <i>Antheræ</i> .	2	1. Monogynia, - - - 2. Digynia, - - -	1 2
2.	DIANDRIA. Two fruitful <i>Stamina</i> or male parts.	3	1. Monogynia, - - - 2. Digynia, - - - 3. Trigynia, - - -	1 2 3
3.	TRIANDRIA. Three ditto.	3	1. Monogynia, - - - 2. Digynia, - - - 3. Trigynia, - - -	1 2 3
4.	TETRANDRIA. Four ditto, all of equal length, by which it is distinguished from the fourteenth class.	3	1. Monogynia, - - - 2. Digynia, - - - 3. Tetragynia, - - -	1 2 4
5.	PENTANDRIA. Five ditto.	3	1. Monogynia, - - - 2. Digynia, - - - 3. Trigynia, - - - 4. Tetragynia, - - - 5. Pentagynia, - - - 6. Polygynia, - - - many	1 2 3 4 5 many
6.	HEXANDRIA. Six ditto, all of equal length, by which this is distinguished from the sixteenth class.	5	1. Monogynia, - - - 2. Digynia, - - - 3. Trigynia, - - - 4. Tetragynia, - - - 5. Polygynia, - - - many	1 2 3 4 many
7.	HEPTANDRIA. Seven ditto.	4	1. Monogynia, - - - 2. Digynia, - - - 3. Tetragynia, - - - 4. Heptagynia, - - -	1 2 4 7
8.	OCTANDRIA. Eight ditto.	4	1. Monogynia, - - - 2. Digynia, - - - 3. Trigynia, - - - 4. Tetragynia, - - -	1 2 3 4
9.	ENNEANDRIA. Nine ditto.	3	1. Monogynia, - - - 2. Trigynia, - - - 3. Hexagynia, - - -	1 2 6
			10. DECAN-	

Number of the Classes.	Their Names and Characters.	Number of Orders in each.	Their Names, expressive of the Number of Female Parts or Styles.	Number.
10.	DECANDRIA. Ten ditto.	5	{ 1. Monogynia, - - - 1 { 2. Digynia, - - - 2 { 3. Trigynia, - - - 3 { 4. Pentagynia, - - - 5 { 5. Decagynia, - - - 10	
11.	DODECANDRIA. From eleven to nineteen Stamina, inclusive.	6	{ 1. Monogynia, - - - 1 { 2. Digynia, - - - 2 { 3. Trigynia, - - - 3 { 4. Pentagynia, - - - 5 { 5. Octagynia, - - - 8 { 6. Dodecagynia, - - - 12	
12.	ICOSANDRIA. Twenty stamina and up- wards (sometimes few- er) affixed to the inner side of the Corolla or calyx and not to the receptacle; the corol- la is fastened to the in- ner side of the calyx, which is concave and of one leaf.	5	{ 1. Monogynia, - - - 1 { 2. Digynia, - - - 2 { 3. Trigynia, - - - 3 { 4. Pentagynia, - - - 5 { 5. Polygynia, - - - many	
13.	POLYANDRIA. From fifteen to one thou- sand stamina, which are fastened to the receptacle. It differs from the Icosandria in the calyx and the in- sertion of the Stamina and Corolla.	7	{ 1. Monogynia, - - - 1 { 2. Digynia, - - - 2 { 3. Trigynia, - - - 3 { 4. Tetragynia, - - - 4 { 5. Pentagynia, - - - 5 { 6. Hexagynia, - - - 6 { 7. Polygynia, - - - many	
Their Names expressive of the disposition of their Seeds.				
14.	DIDYNAMIA. Four Stamina: the two next to one another shorter than the other two; one style and an uneven Corolla.	2	{ 1. Gymnospermia---Seeds naked in the calyx. { 2. Angiospermia----Seeds covered in a seed-vessel.	
15.	TETRADYNAMIA. Six Stamina, tapering and erect: the two opposite as long as the calyx, the other four a little longer; four even pe- tals.	2	{ 1. Siliculosa--Seeds in small short pods. { 2. Siliquosa---Seeds in long slender pods.	

16. MONA-

Number of the Classes.	Their Names and Characters.	Number of Orders in each.	Their Names chiefly expres- sive of the Number of Male Parts or Stamina.	Number.
16.	MONADELPHIA. A <i>Perianthium</i> , perma- nent, often double; five petals. The fila- ments all joined in one parcel below, but not above; the external shortest.	5	1. Pentandria, - - - 5 2. Decandria, - - - 10 3. Endecandria, - - - 11 4. Dodecandria, - - - 12 5. Polyandria, - - - many	
17.	DIADELPHIA. The filaments all joined below in two parcels, one simple the other nine-cleft. A perian- thium of one leaf, bell- shaped and falling-off. The <i>Corolla</i> always but- ter-fly-shaped and un- even.	3	1. Hexandria, - - - 6 2. Octandria, - - - 8 3. Decandria, - - - 10	
18.	POLYADELPHIA. The filaments united be- low into three or more distinct parcels.	3	1. Pentandria, - - - 5 2. Icosandria, - - - 20 3. Polyandria, - - - many	
19.	SYNGENESIA. The <i>Stamina</i> joined by their <i>Antheræ</i> (rarely by their filaments) in form of a cylinder.	6	1. Polygamia <i>Æqualis</i> --- Equal Polygamy. The flo- rets all hermaphrodite. 2. Polygamia <i>Superflua</i> --- Superfluous Polygamy. The florets in the center herma- phrodite, those in the cir- cumference female. 3. Polygamia <i>Frustranea</i> --- Ineffectual Polygamy. The florets in the center herma- phrodite, those in the cir- cumference barren. 4. Polygamia <i>Necessaria</i> --- Necessary Polygamy. The hermaphrodite florets in the center barren, but the fe- male in the circumference fruitful. 5. Polygamia <i>Segregata</i> --- Separate Polygamy. The florets separated by partial flower-cups within a com- mon calyx. 6. Monogamia, Single mar- riages, containing simple flowers whose <i>Antheræ</i> are united.	

Number of the Classes.	Their Names and Characters.	Number of Orders in each.	Their Names chiefly expres- sive of the Number of Male Parts or Stamina.	Number.
20.	GYNANDRIA. The <i>Stamina</i> or male parts attached to, and grow- ing upon the female or <i>Pistillum</i> .	7	1. Diandria, - - - 2. Triandria, - - - 3. Tetrandria, - - - 4. Pentandria, - - - 5. Hexandria, - - - 6. Decandria, - - - 7. Polyandria, - many	2 3 4 5 6 10 many
21.	MONOECIA. Male and female flowers in distinct cups on the same plant.	11	1. Monandria, - - - 2. Diandria, - - - 3. Triandria, - - - 4. Tetrandria, - - - 5. Pentandria, - - - 6. Hexandria, - - - 7. Heptandria, - - - 8. Polyandria, - many 9. Monadelphia, Filaments united. 10. Syngenesia, Antheræ united. 11. Gynandria, Stamina grow- ing out of the pistillum.	1 2 3 4 5 6 7 many united. united. growing out of the pistillum.
22.	DIOECIA. Male and female flowers on different plants of the same Species.	14	1. Monandria. - - - 2. Diandria, - - - 3. Triandria, - - - 4. Tetrandria, - - - 5. Pentandria, - - - 6. Hexandria, - - - 7. Octandria, - - - 8. Enneandria, - - - 9. Decandria, - - - 10. Dodecandria, - - - 11. Polyandria, - many 12. Monadelphia, Filaments united. 13. Diadelphia, Antheræ united. 14. Syngenesia, Stamina grow- ing out of the pistillum.	1 2 3 4 5 6 7 8 10 12 many united. united. growing out of the pistillum.
23.	POLYGAMIA. Male, female and her- maphrodite flowers di- stinct in the same Spe- cies, and sometimes on the same plant.	3	1. Monoecia, one house, or male and female flowers on the same plant. 2. Dioecia, two houses, or male and female flowers on se- parate plants. 3. Trioecia, three houses, or male, female and herma- phrodite, growing on three distinct plants of the same Genus.	
24.	CRYPTOGAMIA. The fructification either wholly escapes our no- tice, or the flowers are hid within the fruit.	4	1. Filices. Ferns. 2. Musci. Mosses. 3. Algæ. Fucus, or Sea-weed. 4. Fungi, Mushrooms.	

Note, *Palmae*, the Palms have, in late works, been added by way of appendix, and constitutes the 25th class; but as these are not natives of these States, and their fructification but imperfectly known, they are omitted.

From the preceding View it appears, that the Names and Characters of the Twenty-four Classes, are each founded on either the *Number, Insertion, Equality, Connection, Situation, or Absence* of the STAMINA OF MALE SEXUAL ORGANS.

On Number only, are founded the first eleven Classes, from Monandria to Dodecandria.

On Number and Insertion, } Icofandria and Polyandria.

On Number and Equality, } Didynamia and Tetradynamia.

On Connection, Monadelphia, Diadelphia, Polyadelphia, and Syngenefia.

On Insertion only, Gynandria.

On Situation, Monoecia, Dioecia and Polygamia.

On Absence, Cryptogamia.

An Explanation of the different parts of Fructification.

FRUCTIFICATION is a temporary part of vegetables, appointed for the purpose of generation, terminating the old vegetable and beginning the new. The parts of fructification are the seven following, viz.

1. The *Calyx*, flower-cup, or empalement.
2. The *Corolla*, petals, or painted leaves of the flower.
3. The *Stamina*, threads, or chives.
4. The *Pistilum*, or pointal.
5. The *Pericarpium*, or Seed-vessel.
6. The *Seeds*.
7. The *Receptacle*, or base on which all the other parts of the fructification are connected.

I. The *calyx* (which is the termination of the outer bark of the plant, presenting itself in the fructification, in this form) comprehends the seven following species, viz. the *perianthium*, the *involucrum*, the *amentum*, the *spadix*, the *gluma*, the *calyptra*, and *volva*, of each of which in their order.

1. The *perianthium*, the flower-cup or empalement properly so called, is the most common species of calyx, and situated close to the fructification. If it encloses the *stamina* and *germen*, it is called the *perianthium* of the fructification. If it encloses the *Stamina* and not the *germen*, it is the *perianthium* of the flower. If it includes the *germen*, and not the *stamina*, it is the *perianthium* of the fruit.
2. The *involucrum* or cover is situated at the bottom of an umbel, at some distance from the flower. It is called an universal *involucrum* or cover, if it is situated at the bottom of an universal umbel; and a partial *involucrum* or cover, if at the foot of a partial umbel.
3. The *amentum* or katkin is that sort of calyx, which consists of a great number of chaffy scales proceeding from a common receptacle or slender thread, as in hazel, alder, &c.
4. The *spatha* or sheath is a sort of calyx which bursts lengthways, and puts forth a stalk supporting the flowers; as in *narcissus*, snow-drop, *arum*, indian turnep &c.
5. The *gluma* or chaffy husk, is that sort of calyx peculiar to grasses, composed of thin scales or valves, which are often terminated by an *arista*, a beard, or awn.
6. The *calyptra* a veil or hood, is a sort of calyx peculiar to mosses,

mosses, placed over their *antheræ*, and resembling a monk's cowl, or rather an extinguisher.

7. The *volva* is a sort of calyx peculiar to the *fungi* or mushroom tribe, involving or inclosing their fructification. It is membranaceous and torn quite round.

II. The *corolla*, literally a wreath or garland, (serving together with the calyx as covers to the parts they inclose) is the termination of the inner bark of the plant presenting itself in this form, and consists of the *petalum* and *nectarium*.

1. The *petalum* or petal is the corollaceous covering of the flower. If the flower is monopetalous, *i. e.* consists of one petal, the lower hollow part of such a *corolla* is called *tubus*, the tube, and the upper part which spreads wider is called *limbus*, the limb or border. And from its different figure it is called either,

Bell-shaped, without any tube below,

Funnel-shaped or conical, with a tube,

Saucer or *salver-shaped*, with a tube,

Wheel-shaped, without any tube below; or

Gaping, lipped or masked.

If the *corolla* be polypetalous, *i. e.* consists of many petals, the lower part of each petal is called, the *unguis*, or claw. And the upper part which is wider, is called the *lamina*, or thin plate.

Again this upper part or *lamina*, is either

Cross-shaped, of four equal spreading petals; or

Butter-fly-shaped, irregular and of four petals; the upper one of which is called the *standard*; the two side ones *wings*; and the under one the *keel*.

2. The *nectarium* is that part of the *corolla* which contains the honey; having a wonderful variety both as to shape and situation, and is sometimes united with the petals, and sometimes separate from them.

III. The *stamina* are those parts of a flower appropriated to the preparation of the *pollen*, or fecundating dust, and consist of the *filamentum*, the *anthera*, and the *pollen*.

1. The *filamentum*, the filament or thread serves to elevate the *antheræ*, and connect it to the flower.

2. The *anthera*, or summit of the *stamen*, is that part which contains the *pollen* or fecundating dust, and discharges it when ripe.

3. The *pollen*, or impregnating dust, is that fine powder contained within the *antheræ*, or tops of the *stamina*, and dispersed when ripe, upon the female organ, for impregnating the same.

IV. The

IV. The *pistillum*, pointal, or female organ, adheres to the fruit, and is that part appropriated for the reception of the pollen, spoken of above. It consists of the *germen*, the *stylus*, and the *stigma*.

1. The *germen*, or seed-bud, is the base or lower part of the *pistillum*, containing the rudiments of the unripe fruit, or seed, in the flowering state of the plant,
2. The *stylus*, or style, is that part of the *pistillum* which stands upon the *germen*, and elevates the *stigma* or summit.
3. The *stigma*, the summit, or top of the style, is that part which receives the fertilizing dust of the *antheræ*, and transmits its *effluvia*, through the style into the middle of the *germen*, or seed-bud.

V. The *pericarpium*, or seed vessel, is that part which contains the seeds, and discharges them when ripe. It comprehends the eight following species, viz. the *capsula*, the *siliqua*, the *legumen*, the *conceptaculum* or *folliculus*, the *drupa*, the *pomum*, the *bacca*, and the *strobilus*; of each of which in their order.

1. The *capsula*, a capsule or little casket, is a dry hollow seed-vessel, that splits or opens in some determinate manner. Capsules, when opened or split, are divided outwardly into one or more pieces, called *valvulae*, or valves, the parts which divide the capsules internally into cells are called *dissepimenta*, or partitions. And the substances which connect the partitions to the seeds, are called *columellae*, or little-pillars. The empty spaces for containing the seeds, are called *loculamenta*, or cells.
2. The *siliqua*, or pod is a seed-vessel with two valves, having the seeds fixed along the joining or edge of both valves.
3. The *legumen*, or cod, is a seed-vessel with two valves, having the seeds fixed along the edge of one of the valves only.
4. The *conceptaculum*, a receiver; or *folliculus*, a little bag, is a seed-vessel with one valve, splitting length-ways from top to bottom, and has no seam for fastening the seeds within it.
5. The *drupa*, drupe, or stone fruit, is a pulpy seed-vessel, which has no valve, or external opening, and contains within it a stone or nut.
6. The *pomum*, or apple, is a pulpy seed-vessel, which has no valve or external opening, and contains within it a capsule.
7. The *bacca*, or berry, is a pulpy seed vessel, which has no valve, and contains seeds which are naked, or have no other covering than the pulp.

8. The *strobilus*, or cone, is a seed-vessel composed of woody scales, laid over one another like tiles; it opens only at top, the scales being fixed below to the center of the cone.

VI. *Semen*, the seed, is a deciduous part of the plant, containing the rudiments of a new vegetable, and fertilized by the sprinkling of the male dust. Under this head are comprehended the seed properly so called, the *nut* and *propago*. The *nut* is a seed covered with a hard bony skin.

Propago, the seed of the mosses, which has no tunic or covering.

VII. The *receptaculum*, or receptacle, the seventh and last part of the fructification on which the other six are connected, comprehends the *receptaculum proprium*, the *receptaculum commune*, and the *spadix*.

1. The *receptaculum proprium*, or proper receptacle, which belongs to the parts of a single fructification only. It is called the receptacle either of the *fructification*, when it is common to both flower and fruit; of the *flower*, when the parts of the flower only are fastened to it without the *germen*; of the *fruit* when it is a base for the fruit, and at a distance from the receptacle of the flower; or of the *seeds*, when it is a base to which the seeds are fixed within the *pericarpium* or seed-vessel.

2. The *receptaculum commune*, or common receptacle, is that which connects several florets together; as in compound flowers; and is either *paleaceum* chaffy, *i. e.* with thin membranaceous chaffy plates rising between the florets, or *nudum* naked, without chaffy plates.

3. The *spadix* is the receptacle of the palms, and is always branched. It is also used to signify the flower stalk of every plant, which was originally contained within a *spatha* or sheath; but in this last case it is often simple.

Explanation of the Modes of Flowering.

The *peduncle* or foot-stalk of the flower is a partial trunk, bearing the fructification only, but not the leaves.

When branched or divided, each of the divisions is called *pedicellus*, or a little flower-stalk.

Flower-stalks are distinguished from the place of the plant where they grow, into,

1. The *radical* flower-stalk, when they proceed immediately from the root.

2. The *cauline* flower-stalk, which proceeds from the stem.

3. The

3. The *branch* peduncle, which proceeds from the branches.
4. The *axillary*, or bosom flower-stalk, which comes out between the leaf and stem, or between the branch and stem.
5. The *terminal* flower-stalk, which comes from the extremity of the branch or stem.
6. The *solitary* peduncle, when there is only one in the same place.
7. The *scattered* peduncles, when a great many grow together without any order.

Flower-stalks are also distinguished from the different modes in which flowers are borne and connected on them, into the *uniflorous*, *biflorous*, *triflorous*, or *multiflorous* peduncle, that is, which bear one, two, three, or many flowers.

Flowers are also collected or borne in the ten following modes.

1. The *fasciculus*, a bunch or bundle, when peduncles are erect, parallel, placed close to one another, and all of the same height, as in *sweet-william*.
2. The *capitulum*, a little head, where many flowers are collected into a head, at the extremity of a peduncle, as in *globe amaranthus*.
3. The *spike*, where the flowers sit close without foot-stalks, and are placed along a common flower-stalk. A spike is called *secunda*, single ranked, when all the flowers are turned to one side; or *disticha*, double ranked, when the flowers look to both sides, or stand two ways.
4. The *corymbus*, where the lesser flower-stalks of unequal lengths are produced along the common peduncle on all sides, and rise to the same height, so as to form a flat or even surface at top, as in *spiræa opulifolia*.
5. The *panicle* where the fructifications are dispersed upon foot-stalks variously subdivided, as in oats, &c. a panicle is said to be *diffuse* when the partial foot-stalks diverge, and the fructifications hang loose; or *straight* and narrow; when the foot-stalks approach near to one another.
6. The *thyrsus* is a panicle contracted into an oval or egg-shaped-form, somewhat resembling the cone of a pine; as in *lilac*, *horse chesnut*, &c.
7. The *racemus* or cluster, consists of a common peduncle, having short lateral branches, all nearly of equal length proceeding from it; as in the *vine*, *currants* &c. It is called *racemus secundus*, or a one ranked cluster when all the foot-stalks incline to one side; as in the *sorrel-tree* and most of our *andromedas*.

8. The *verticillus*, or whorl, where the flowers are produced in rings at each joint of the stem, with very short foot-stalks; as in *mint*, *horehound*, &c.
9. The *umbella* or umbel, where a number of small flower-stalks rise from the same center to an equal height and form an even surface at top. It is called a *simple umbel*, when the flower-stalks are simple or undivided; and a *compound umbel*, or sometimes an *universal umbel*, when all the foot-stalks are subdivided into smaller umbels, commonly called *partial umbels*.
10. The *cyma*, or irregular umbel, where the foot-stalks rise from a common center, and to an equal height, as in the umbel; but the secondary or partial foot-stalks are irregularly dispersed, without order as in *elder*, *viburnum* &c.

✂ The Reader is requested to observe that the names of the Species, under which the words, Bartram's Catalogue immediately occur, are not found in Linnaeus's Species Plantarum, but are taken from a Sheet Catalogue published by John and William Bartram, Botanists in Kingsessing; containing the names of Forest Trees and Shrubs, growing in, or near their Garden.

A

C A T A L O G U E

O F

T R E E S A N D S H R U B S.

A C E R.

T H E M A P L E T R E E.

Class 23, Order 1. Polyandria Monoecia.

IT hath Hermaphrodite and Male flowers upon the same tree.

In the *Hermaphrodite*,

The *Empalement* is of one leaf, five cleft, acute, coloured, plain and entire at the base, and permanent.

The *Corolla* consists of five petals, which are ovate, broader outward, obtuse, scarce larger than the calyx, and spreading.

The *Filaments* are eight, awl-shaped and short. The *Antheræ* simple.

The *Germen* is compressed and sunk in the Receptacle, which is large, convex and perforated. The *Style* is thread-form, increasing in length. The *Stigmas* two, sharp-pointed, slender, and reflexed.

The *Seed-vessels* are two capsules joined at the base, roundish, compressed, and each terminating in a large membranaceous wing.

The *Seeds* are solitary and roundish.

The *Male* are the same in all parts except wanting the germen and style.

Obs. The Ash-leaved Maple has male and female flowers on separate trees.

The Species with us are,

1. ACER pennsylvanicum----*Pennsylvanian Dwarf Mountain Maple.*

This grows naturally upon the mountains in the back parts of Pennsylvania. The stems are slender, rising to the height of six or eight feet, and sending off several opposite branches. The leaves are three-pointed, pretty much sawed on their edges, and placed opposite upon pretty long footstalks. The flowers terminate the stalks in a pretty long erect *racemus* or bunch; they are small, of an herbaceous colour, and in part succeeded by small conjoined winged seeds.

2. ACER glaucum. *The Silver-leaved Maple.*

This tree grows frequently to the height of fifty or sixty feet, with many spreading branches. The leaves are five-lobed, somewhat toothed, or deeply and irregularly sawed on their edges: they are of a lucid green on the upper side and a bright silver colour on their under. The flowers are produced in little umbels at the foot of the leaves; they are of a deep red colour, and are succeeded by large winged seeds, which fall off early in the summer. This is perhaps the *Acer rubrum* of Linnæus.

3. ACER Negundo. *The Ash-leaved Maple.*

This tree is dioecious, or having male and female flowers upon different trees; it is but of middling growth, rising perhaps to the height of twenty or thirty feet. The leaves something resemble those of the Ash, but are generally trifoliate or quinquefoliate, or consisting of three or five lobes; which are oval, somewhat pointed, and a little notched towards their extremities. The flowers of the male are produced
upon

upon pendulous bundles of very long fine threads or footstalks, each having a small flower-cup at its extremity, containing five or more stamina. The female produces flowers at the extremity of the small branches, in long loose bunches; they have long footstalks, with a small deciduous empalement; containing a compressed germen, with scarce any style, but two reflexed stigmas.

4. ACER canadense. *American striped Maple.*

This is but of middling growth. The bark, especially of the young shoots, is beautifully variegated or striped. The leaves are divided into three very sharp pointed lobes, and very finely sawed on their edges. The flowers are produced in solitary bunches, with shortish footstalks; having pretty large petals and empalements, containing generally eight stamina or filaments; and in hermaphrodite flowers two reflexed stigmas. The flowers and seeds are of a greenish yellow colour.

5. ACER rubrum. *The Scarlet flowering Maple.*

This grows to a pretty large size in a rich soil. The leaves are three and sometimes nearly five lobed, and sawed on their edges. The flowers are produced in little umbels closely surrounding the small branches, and are of a scarlet colour. The footstalks of the hermaphrodite flowers, shoot out to a considerable length; they are of a scarlet colour, each sustaining two joined winged seeds, somewhat of the same colour. There is a variety of this with yellowish flowers and seeds, which is, I believe, the most common kind in Pennsylvania.

6. ACER

6. *ACER faccharum.* *The Sugar Maple.*

This grows to a large tree of two feet or more in diameter, and fifty or sixty feet high. The leaves something resemble the Silver-leaved Maple, but are not so large, nor deeply lobed; or of so fine a silver colour. It flowers in manner of the Scarlet Maple, but the flowers are of an herbaceous colour; and produces large joined winged seeds. The back inhabitants make a pretty good sugar, and in considerable quantity, of the sap of this and the Silver-leaved Maple; and though these have generally been preferred, yet all our Maples yield a sap which affords a pretty good sugar.

ÆSCULUS.

THE HORSE-CHESTNUT-TREE.

Class 7. Order 1. Heptandria Monogynia.

THE *Empalement* is of one leaf, tubulous, small and five-toothed.

The *Corolla* consists of five petals, roundish, waved with a plaited margin, plane, spreading, unequally coloured, and inserted by narrow claws into the calyx.

The *Filaments* are seven (sometimes eight) awl-shaped, the length of the corolla, and declined. The *Antheræ* rising.

The *Germen* is roundish, ending in an awl shaped *Style*. The *Stigma* sharp pointed.

The *Seed-vessel* a capsule, coriaceous, roundish, three-cell'd and three valv'd.

The *Seeds* or nuts two, somewhat globose, often but one arriving to perfection.

1. *ÆSCULUS octandra.* *New river Horse Chestnut.*

This often becomes a tree of pretty large size. The branches are smooth and of a greyish colour. The leaves are palmated, or composed of five pretty large

large lobes joined at their base, having a pretty long common footstalk: they are somewhat wedge shape, or narrower towards the base than the point, veined with oblique parallel veins, and sawed on their edges. The flowers are produced in a loose *thyrsus*, at the extremity of the branches, of a pale yellowish colour; and are succeeded by fruit near the size of the eastern Horse-Chestnut.

2. *ÆSCULUS Pavia.* *Scarlet flowering Horse-Chestnut.*

This is but of humble growth, seldom rising to more than ten or twelve feet high; sending out several branches, with leaves and flowers much like the former, except the flowers being of a bright red colour: they stand upon short naked footstalks, branching from the common stem, generally five or six together in each *thyrsus*. They are tubulous at bottom but spread open at top, where the petals are irregular in size and length, having something the appearance of a lip flower; they have seven or eight stamina the length of the petals. When the flower fades the Germen swells to a pear shaped fruit, with a thick russet coloured covering, containing sometimes one or two nuts.

A M O R P H A.

B A S T A R D - I N D I G O.

Class 17. Order 3. *Diadelphia Decandria.*

THE *Empalement* is of one leaf, tubulous, cylindrical and top-shaped: at the mouth erect, five-toothed, and obtuse: the two superior teeth largest; permanent.

The *Corolla* is a single petal, inverse egg-shape, concave, scarce larger than the calyx, erect, inserted in the calyx between the two largest upper teeth, and placed on the upper side.

The

The *Filaments* are ten, very slightly joined at the base, erect, unequal in length, and longer than the corolla. The *Antheræ* are simple.

The *Germen* is roundish. The *Style* awl-shaped and the length of the *Stamina*. The *Stigma* is simple.

The *Seed-vessel* a Legumen or Pod, moon-shaped, reflexed, larger than the calyx, compressed, the top most reflexed, of one cell, and tubercled.

The *Seeds* are two, of an oblong kidney form.

Obs. This is singularly distinguishable from all the Papilionaceous tribe, in having only the vexillum or standard, and wanting the wings and keel.

There appears to be but one Species of this Genus, viz.

AMORPHA fruticosa. Shrubby Bastard Indigo.

This grows naturally in Carolina, where it rises with many irregular stems, to the height of ten or twelve feet, with very long winged leaves, in shape like those of the common Acacia. At the extremity of the same year's shoots, the flowers are produced in long slender spikes, which are very small and of a deep purple colour. The flowers are succeeded by moon-shaped, reflexed, compressed pods, each containing two kidney-shaped seeds.

A N D R O M E D A.

A N D R O M E D A.

Class 10. Order 1. Decandria Monogynia.

THE *Empalement* is five-parted, acute, very small, coloured, and permanent.

The *Corolla* consists of one petal, bell-shaped and five-cleft: the divisions reflexed.

The *Filaments* are ten, awl-shaped, longer than and scarcely affixed to the corolla. The *Antheræ* are two horned and nodding.

The *Germen* is roundish. The *Style* cylindrical, longer than the *Stamina* and permanent. The *Stigma* is obtuse.

The *Seed-vessel* a capsule, roundish, pentagonal, five-celled, five valved, and gaping at the angles.

The

The *Seeds* are many, roundish and shining.

Obs. The Corolla in some is ovate, in others perfectly bell-shaped.

The Species are, native with us,

1. *ANDROMEDA* arborea. *The Sorrel Tree.*

It grows naturally in Virginia, to about ten or twelve feet high. The flowers grow in long naked bunches, coming out from the sides of the branches, of an herbaceous colour, ranged on one side of the common foot-stalk: they are oval, pitcher-shaped, and nodding; and are succeeded by small capsules.

2. *ANDROMEDA* calyculata. *Ever-green Dwarf Andromeda.*

This is a low shrub, growing on mossy land. The leaves are shaped something like those of the Box tree, and are of the same consistence, having many small punctures on them. The flowers grow in short racemi or bunches from the extremity of the branches, they are white and of a cylindrical pitcher-shape.

3. *ANDROMEDA* paniculata. *Panicled Andromeda.*

This shrub grows in boggy wet ground, rising from two or three to six or seven feet high, sending out several branches which are clothed with oblong leaves, a little notched and placed alternately. The flowers grow in long loose panicled *racemi* or bunches, at the extremity of the branches; they are pitcher-shaped, and succeeded by small round seed-vessels, having five cells, filled with small round seeds. There is a variety of this of low growth, differing in having shorter

shorter paniced bunches of flowers, and these coming out at the divisions, as well as at the extremities of the branches.

4. *ANDROMEDA racemosa.* *Pennsylvanian Red-bud Andromeda.*

This grows in low clayed lands, to the height of five or six feet. The leaves are oblong and serrated. The flowers are produced in a one sided *racemus* at the extremity of the branches, and resemble the other kinds. The long bunch of flower buds are of a beautiful red colour in the spring, and thereby make a good appearance.

5. *ANDROMEDA mariana.* *Maryland, or broad-leaved Andromeda.*

Is a shrub of low growth, having but a small stem, which is generally retroflected or bent from side to side. The leaves are egg-shaped, entire, broad, and of pretty thick consistence. The Seed-vessels are larger than the other kinds, gaping at their tops.

6. *ANDROMEDA nitida.* *Ever-green shining-leaved Andromeda, or Carolinian Red-buds.*

(Bartram's Catalogue.)

This shrub grows naturally in Carolina and Florida, and may justly be ranked among the most beautiful flowering.

The leaves are perennial, near three inches in length and one in breadth, of a hard and firm texture, lance-shape, of a deep shining, or glossy green colour on both sides, placed by pretty long footstalks alternately upon each side of the branches, but inclining

clining to the upper side, and standing nearly erect. The flowers are produced along the under side of the branches, in long one rowed *racemi* or bunches, which as they arrive to their full growth change to a damask rose colour. The under parts of the bunches somewhat resemble the cells of a honey-comb, diffusing an agreeable fragrance, and affording a delicious harvest to the honey-bee.

7. ANDROMEDA plumata. *Plumed Andromeda,*
or Carolinian Iron-wood Tree.

(Bartram's Catalogue.)

This is also a southern beautiful species of Andromeda; rising to the height of fifteen or twenty feet, and sending off towards the top, many spreading and nearly horizontal branches.

The leaves are small, lance-shaped, and of a deep glossy green, but changing in Autumn before they fall off, to yellow, red, purple, &c. giving the trees a beautiful appearance, even in their decline. The flowers are produced at the extremity of the branches, in one-rowed racemes or bunches, they are very small and perfectly white, somewhat resembling a plume of delicate white feathers. This and the last mentioned, grow naturally by the sides of ponds, and swamps, in Carolina and Florida.

A N N O N A.

PAPAW TREE, or CUSTARD APPLE.

Class 13. Order 7. Polyandria Polygynia.

THE *Empalement* is three leaved and small: the leaves heart-shaped, concave, and sharp-pointed.

The *Corolla* is composed of six petals, heart-shaped and sessile or squat: the three alternate interior less.

B

The

The *Filaments* scarce any. The *Antheræ* are very numerous, sitting upon the sides of the *Germen*.

The *Germen* is somewhat round, sitting upon a roundish receptacle. The *Styles* none. The *Stigmas* obtuse.

The *Seed-vessel* a very large berry or fruit, of an oval or oblong shape, covered with a smooth rind, and of one cell.

The *Seeds* are several, hard, shining, oblong, oval, (compressed in some species) and placed in a circle.

The Species with us are,

1. *ANNONA glabra. Carolinian Smooth-barked Annona.*

The bark is smooth, the leaves broad, oval, but narrowed towards the base. The fruit is large, yellow and somewhat conical. This grows naturally in Carolina.

2. *ANNONA triloba. Pennsylvanian Triple-fruited Papaw.*

This grows common in rich bottoms and by river sides, in Pennsylvania. It rises to the height of ten, twelve, and sometimes twenty feet, with but few branches, garnished with pretty long large leaves, narrowed toward the base and smooth on their edges. The flowers are solitary, and of a dark purple colour; they have short footstalks, which with the flower-cup is covered with short brown hairs or down. The fruit is often found growing two or three together, which soon falls off, becomes very mellow and turns of a yellow colour.

A R A L I A.

THE ANGELICA TREE.

Class 5. Order 5. Pentandria Pentagyina.

AN *Involucrum*, which is very small, to the little globular umbels.

The

The *Empalement* is five-toothed, very small, and above.

The *Corolla* consists of five petals, which are ovate, acute, sessile and reflexed.

The *Filaments* are five, awl-shaped, and the length of the corolla. The *Antheræ* are roundish.

The *Germen* is roundish and beneath. The *Styles* five, very short, and permanent. The *Stigmas* simple.

The *Seed-vessel* a berry, roundish, striated, crowned and five-celled.

The *Seeds* are solitary, hard, and oblong.

The Species with us are,

ARALIA spinosa. Virginian Angelica Tree.

This rises with a thick woody stem to the height of ten or twelve feet, dividing into several branches, which are garnished with ramose divaricated leaves, placed alternately. The flowers are produced in large, loose, compound umbels, at the extremity of the branches: they are of an herbaceous colour, and are succeeded by roundish berries of a purplish colour when ripe. The stem, branches, and footstalks of the leaves are armed with short strong spines.

A R B U T U S.

THE STRAWBERRY TREE, OR BEAR-BERRY.

Class 10. Order 1. Decandria Monogynia.

THE *Empalement* is five parted, obtuse, very small and permanent.

The *Corolla* is one petalled, ovate, planish at the base; the border is five cleft; the divisions obtuse, revolute and small.

The *Filaments* are ten, awl-bellied, very slender at the base, half the length of the corolla, and affixed by the margin to its base. The *Antheræ* are slightly two cleft and nodding.

The *Germen* is somewhat globose, sitting upon a receptacle marked with ten points. The *Style* is cylindrical and the length of the corolla. The *Stigma* is thickish and obtuse.

The *Seed-vessel* is a berry, roundish and five celled.

The *Seeds* are small and bony.

The

The Species with us are,

ARBUTUS Uva ursi. *The Bear-berry.*

This grows naturally in the Jerseys. It is a low trailing shrub, dividing into many branches, closely set with smooth, thick, entire leaves, of an oval form. The flowers are produced in small bunches, near the ends of the branches, and are succeeded by red berries. This has been used with great success in many calculous complaints.

ARISTOLOCHIA.

BIRTHWORT.

Class 20. Order 5. Gynandria Hexagynia.

THE *Empalement* is wanting.

The *Corolla* is of one petal, tubulous and irregular: the *base* bellied, somewhat globular and protuberant: the *tube* oblong, six cornered cylindrical: the *border* dilated and extended beneath in a long tongue.

The *Filaments* are wanting. The *Antheræ* are six adjoined under the *Stigmas*, and four celled.

The *Germen* is oblong beneath and angled. The *Style* scarce any. The *Stigma* somewhat globular, six parted, and concave.

The *Seed-vessel* is a capsule, which is large, hexagonal and six celled.

The *Seeds* are many, depressed and incumbent.

Obs. The *Seed-vessel* varies in figure; in some species it is roundish, in others oblong.

The Species growing shrubby, with us, is one, viz.

ARISTOLOCHIA frutescens. *Pennsylvanian*
Shrubby Birthwort.

This grows naturally near Pittsburg, in a rich soil and shaded situation; rising with shrubby cylindrical
cal

cal stems, which twine round any neighbouring support, and reach sometimes to the height of thirty feet or more, sending off many long twining branches. The leaves are large, entire, and heart-shaped, of eight inches or more in length, and as much in breadth, standing upon thick strong foot-stalks. The flowers come out singly, or sometimes two together upon pretty long foot-stalks, which are either terminal, or arise beneath the divisions of the branches, each having a bractea or floral leaf embracing it near its base; they consist of a long tube which is very crooked and bellied towards the base, but narrower towards the extremity, and furnished with a border which at first appears three lobed and triangular (in form of a cock'd hat,) but after becomes spreading, plain and roundish, and together with the interior extremity of the tube, is finely variegated with spots or streaks. The Capsules or Seed-vessels are cylindrical six-sided, of three or four inches in length and near one in diameter, opening with six fissures, and having six cells, filled with heart-shaped compressed seeds, with a false one between each. This from its twining stems and large leaves affords a fine shady covering for an arbour.

The roots have an aromatic penetrating flavour, and are supposed to be equal in medical virtues to the small Virginian Snake-root.

A S C Y R U M.

ST. PETER'S WORT.

Class 18. Order 3. Polyadelphia Polyandria.

THE *Empalement* is of four leaves; the exterior opposite are very small and linear; the interior heart-shaped, plane, large, and erect, and all permanent.

The

The *Corolla* is of four petals, ovate: the exterior opposite largest, the interior less.

The *Filaments* are numerous, bristly, slightly joined at the base into four parts. The *Antheræ* are roundish.

The *Germen* is oblong. The *Style* scarce any. The *Stigma* simple.

The *Seed-vessel* a Capsule, oblong, sharp pointed, and enclosed by the larger leaves of the empalement.

The *Seeds* are numerous, small and roundish.

The Species are,

1. ASCYRUM Hypericoides. *St. Peter's Wort.*

This is a small shrubby plant, growing naturally in low moist ground, and rising with a few slender stems to the height of about eighteen inches, having small opposite branches, which are somewhat flattened. The leaves are small, oblong, somewhat wedge-shape, placed opposite, and fitting close. The flowers are sparingly produced at the tops of the stalks, and have somewhat the appearance of those of St. John's wort.

2. ASCYRUM villosum. *Villose St. Peter's wort.*

This rises to the height of about three feet, with erect stalks. The leaves are oblong and hairy. The flowers are produced at the tops of the stalks, resembling those of St. John's wort, but have only four petals.

A Z A L E A.

U P R I G H T H O N E Y - S U C K L E.

Class 5. Order 1. Pentandria Monogynia.

THE *Empalement* is five parted, erect, acute, small, coloured and permanent.

The

The *Corolla* is monopetalous, bell-shaped, and half five-cleft: the side divisions inflexed.

The *Filaments* are five, filiform, free, unequal in length, and inserted in the receptacle. The *Antheræ* are simple.

The *Germen* is roundish. The *Style* filiform, the length of the corolla and permanent. The *Stigma* is obtuse.

The *Seed-vessel* is a Capsule, roundish, five cell'd, and five valv'd.

The *Seeds* are several, roundish.

Obs. The figure of the petal in some Species is funnel form, in others bell-shaped; the stamina in some are also very long and declined.

The Species with us, are,

1. *AZALEA nudiflora.* *Red-flowered Azalea.*

This grows most common upon a moist, clayey, gravelly soil, rising from two or three, to five or six feet in height. The leaves are produced in clusters at the extremity of the branches; they are oblong, inverse, egg-shaped, and a little hairy upon their edges and midribs underneath. The flowers are produced early in the spring before the leaves are expanded, in heads or clusters at the ends of the stalks and chief branches, of a red colour, and hairy, with very long red stamina. There is great variety in the colour of the flowers, from red to almost white.

2. *AZALEA viscosa.* *White sweet Azalea.*

This grows naturally in rich rocky places, near streams of water; rising to the height of five or six feet. The leaves are much smaller and of a paler green colour than those of the red flowered, otherwise resembling them. The flowers are produced after the leaves are fully expanded, (about harvest time;) they are white, hairy and clammy, and have the fragrance of the honey-suckle.

3. *AZALEA*

3. AZALEA viscosa palustris. *Swamp Azalea.*

This is a variety of the white kind, growing naturally in wet low ground. It is of lower growth, with leaves rough and clammy at their first appearance. The flowers are white, but not so sweet as the former. There is also some other varieties differing somewhat in the disposition or appearance of their flowers, &c.

BACCHARIS.

PLOWMAN'S SPIKENARD.

Class 19. Order 2. Syngenesia Polygamia Superflua.

THE Common Calyx is cylindrical, and imbricated: the Scales linear and acute.

The Compound Corolla, is equal with Florets Hermaphrodite and Female mixed.

The Proper of the hermaphrodite is funnel-form and five cleft.

———— of the female scarce manifest, or almost none.

The Filaments of the hermaphrodite are five, capillary and very small. The Antheræ cylindrical and tubulous.

The Germen of the hermaphrodite is ovate. The Style filiform and the length of the flower. The Stigma is bifid or two cleft.

Of the female very like the hermaphrodite.

The Seed-vessel none, but the calyx changed.

The Seeds of the hermaphrodite and female much alike, solitary, very short, and oblong. The Pappus simple.

The Receptacle is naked.

The Species are,

BACCHARIS halimifolia. *Virginian Groundsel Tree.*

It rises to the height of six or eight feet, sending out many erect branches, garnished with leaves which

which are somewhat ovate, and a little toothed above, continuing green most of the year. The flowers are produced at the extremity of the branches, and are of a yellowish white colour.

B E R B E R I S.

The B A R B E R R Y - B U S H.

Class 6. Order 1. Hexandria Monogynia.

THE *Empalement* is six leaved and spreading; the leaves ovate, narrower at the base, concave, the alternate less, coloured, and deciduous.

The *Corolla* is of six petals, which are roundish, concave, somewhat spreading, and scarce larger than the calyx.

A *Nectarium* of two corpuscles, roundish, coloured and affixed to the base of each petal.

The *Filaments* are six, erect, compressed and obtuse. Two *Antheræ* are joined to the top of each filament.

The *Germen* is cylindrical and the length of the stamina. The *Style* is wanting. The *Stigma* is orbiculate, broader than the germen, and surrounded by an acute margin.

The *Seed-vessel* is a berry, which is cylindrical, obtuse and of one cell.

The *Seeds* are two, oblong, cylindrical and obtuse.

The Species are,

BERBERRIS canadensis. *The Canadian Barberry.*

This grows naturally in Canada, and somewhat resembles the European Barberry, except the leaves being much shorter and broader, and the fruit, when ripe, of a black colour. There is also a kind of Barberry growing upon New-River in Virginia, bearing red berries, of which I have seen one small plant.

C

BETULA.

BETULA.

The BIRCH-TREE.

Class 21. Order 4. Monoecia Tetrandria.

*THE *Male* flowers are disposed in a cylindrical Katkin. The *Calyx*, is a common Katkin, imbricated on all sides, loose and cylindrical; composed of triflorous *Scales*, to each of which, two very minute scales are placed at the sides.

The *Compound Corolla* consists of three florets, equal, and affixed to the disk of each scale of the Katkin.

The *Proper* is monopetalous, four-parted, spreading, and small: the divisions obtuse and egg-shaped.

The *Filaments* are four, very small. The *Antheræ* are twin.

*The *Female* flowers are disposed in Katkins on the same plant.

The *Calyx* is a common Katkin, imbricated: with three scales every where opposed, affixed to the *rachis*, heart shaped with a point, biflorous, a little divided by a pointed body in the bosom towards the top, concave, and short.

The *Corolla* none manifest.

The *Germen* proper, is ovate, very small. The *Styles* are two, bristly, and the length of the scales. The *Stigmas* simple.

The *Seed-vessel* none. The Katkin embracing the seeds of two florets under each scale.

The *Seeds* are solitary and ovate.

The Species with us are,

1. BETULA nigra. *Black, or Sweet-Birch.*

This becomes a large tree, often rising to the height of fifty or sixty feet, and sending off many branches. The leaves are egg-shaped and doubly or irregularly serrated, the small serratures are close, the larger more remote; their footstalks are villose. The small branches are also covered with down. The natives often make their canoes of the bark of this tree.

2. BETULA

2. BETULA lenta. *Red Birch.*

This grows to a pretty large size, spreading into many slender pliable branches. The leaves are smooth, heart-shaped, oblong, sharp-pointed, and finely and slightly sawed on their edges.

3. BETULA papyrifera. *White Paper Birch.*

This is a variety of the last, growing to a middling size and pretty much resembling it, except in having a very white smooth bark.

4. BETULA populifolia. *Aspen-leaved Birch.*

This is also a variety of the second, and grows naturally in the Jerseys, and other eastern states, becoming a pretty tall tree, and covered with a white bark. The leaves are somewhat triangular, like those of the Aspen tree, but terminating in a long acute point; they are doubly serrated, standing upon long slender footstalks, and are put in motion by the slightest breeze of wind.

5. BETULA humilis. *Dwarf Birch.*

This is also a variety of the second kind, of a low and dwarfish growth.

BETULA - ALNUS.

The ALDER TREE.

THE Characters are the same of the Betula, except the Seed-vessel being a roundish cone.

The Species are,

1. BETULA

1. *BETULA-ALNUS glauca.* *Silver-leaved Alder.*

This grows naturally in low marshy ground, and frequently rises to the height of ten or twelve feet.

2. *BETULA-ALNUS maritima.* *Sea-side Alder.*

This grows to the height of the former. The leaves are long and narrow. The katkins are generally in bloom in August, at which time the female cone or seed-vessel sets, but don't grow to perfection till the next summer.

3. *BETULA-ALNUS rubra.* *Common Alder.*

This grows very common in most parts of Pennsylvania. The leaves are broader than the other kinds, and rough or wrinkled. This flowers in the spring, and perfects its seeds in the fall.

BIGNONIA.

The TRUMPET FLOWER.

Class 14. Order 1. Didynamia Angiospermia.

THE *Empalement* is of one leaf, erect, cup-form, and five-cleft.

The *Corolla* is monopetalous, and bell-shaped. The tube very small and the length of the calyx. The chaps very long, bellied underneath, and of an oblong bell-shape. The border is five parted; the two superior divisions reflexed; the inferior spreading.

The *Filaments* are four, awl-shaped and shorter than the corolla, of which two are longer than the rest. The *Antheræ* are reflexed, oblong, and as if doubled.

The *Germen* is oblong. The *Style* thread-form, of the situation and shape of the stamina. The *Stigma* is headed.

The

The *Seed-vessel* is a filiqua or pod, of two cells and two valves. The *Seeds* are pretty many, imbricated, compressed, and having a membranaceous wing.

Obs. The *Catalpa* delights in only two perfect stamina, and three imperfect rudiments, with a pentaphyllous calyx.

The Species are,

1. *BIGNONIA Catalpa. The Catalpa-Tree.*

This rises to the height of twelve or fifteen feet, with a strong stem, dividing into several branches, which are garnished with large heart-shaped leaves, placed opposite at each joint. The flowers are produced in large branching panicles, at the ends of the branches; of a dirty white colour, with a few purple spots, and faint stripes of yellow on the inside; and waved on their edges: they are succeeded by very long slender pods, filled with flat winged seeds, lying over each other like the scales of a fish.

2. *BIGNONIA crucigera. Cross-vine.*

This rises with slender trailing stalks, which must be supported, so require the assistance of a wall, and a good aspect; being impatient of much cold. The branches are clothed with oblong leaves remaining green all the year. The flowers are produced at the wings of the leaves, shaped much like those of the Fox-glove; and are of a yellow colour.

3. *BIGNONIA radicans. Climing Trumpet-Flower.*

This kind, when old, hath large rough stems, which send out many trailing branches, putting out roots at their joints, thereby attaching themselves to any neighbouring support, and rising sometimes to
the

the height of forty or fifty feet. The branches are garnished with winged leaves placed opposite, which are generally composed of four pair of small leaves, terminated by an odd one. The flowers are produced at the ends of the shoots of the same year, in large bunches; they have long swelling tubes, shaped somewhat like a trumpet, and are of an orange colour, inclining to red; and succeeded by large pods full of winged seeds.

4. *BIGNONIA sempervirens.* *Ever-green Bignonina, or Yellow Jasmine.*

This kind resembles the second so much as to require no further description.

C A L L I C A R P A.

C A L L I C A R P A.

Class 4. Order 1. *Tetrandria Monogynia.*

THE *Empalement* is of one leaf, bell-shaped: at the mouth four-parted and erect.

The *Corolla* is of one petal, tubulous: The border four-cleft, obtuse and spreading.

The *Filaments* are four, thread-form, twice the length of the corolla. The *Antheræ* ovate and incumbent.

The *Germen* is roundish. The *Style* thread form, thicker above.

The *Stigma* thickish and obtuse.

The *Seed-vessel* is a berry, globose and smooth.

The *Seeds* are four, small, callous, oval, compressed, somewhat convex on one side, but a little hallowed as if eaten on the other.

There is but one Species of this Genus, viz.

C A L L I C A R P A americana. *Carolinian Shrubby Callicarpa.*

This shrub rises from three to five feet high, with but slender stems, sending out many branches from the

the sides, which are woolly or downy when young, garnished with oval, spear-shaped leaves, placed opposite on pretty long footstalks. The flowers come out in whorls round the stalks, sitting very close; they are small and tubulous, cut into four obtuse segments at the top, which expand and are of a deep purple colour; these are succeeded by soft succulent berries, which are of a deep purple colour when full ripe, each enclosing four hard seeds. This is a native of Carolina and will not endure much cold.

CALYCANTHUS.

CAROLINIAN ALLSPICE.

Class 12. Order 5. Icosandria Polygynia.

THE *Calyx* is of one leaf, thickened, squarrose, somewhat top-shaped, truncated, almost closed above; and permanent.

The *Corolla* is composed of many leaves, which are oblong, coloured, of thick and fleshy consistence, longer than the calyx, somewhat spreading, but chiefly lightly incurved their whole length; inserted in the truncated margin of the calyx, disposed in several series or rows circularly, of unequal length and deciduous.

The *Filaments* are many, short, awl-shaped and inserted in the top of the calyx; the exterior of which, have oblong furrowed *Antheræ* adjoined to their apex; the interior barren and closing the calyx.

The *Germen* are many, oblong, villose, and hid within the calyx. The *Styles* many, joined in a medullary column and protruding in the center of the barren filaments, which serve for its defence.

The *Seed-vessel* none but the calyx, thickened, much enlarged, berry'd, and somewhat inverse egg-shaped.

The *Seeds* are many, oval, somewhat villose, and surrounded longitudinally with a future.

We have but one Species of this Genus, viz.

CALYCANTHUS

CALYCANTHUS floridus. *Carolinian Allspice.*

This delightful sweet-scented shrub, grows naturally in Carolina, and rises from four to six or eight feet high, sending out many small branches, which are placed opposite and garnished with oval entire leaves; which are likewise opposite. The flowers are produced singly, at the extremities of the same year's shoots; they are of a fullen or dark purple colour, and when somewhat expanded, diffuse to a considerable distance, a very agreeable scent, scarcely distinguishable from that of ripe strawberries. It flowers in May, and by succession till almost harvest. The flowers are succeeded by large, somewhat oval, rough, swelling capsules, of two inches or more in length, and one in diameter, containing many oval brown seeds.

C A R P I N U S.**The H O R N B E A M - T R E E.**

Class 21. Order 8. Monoecia Polyandria.

* **THE Male Flowers** are disposed in a cylindrical Katkin.

The *Calyx* is a common Katkin loosely imbricated on all sides: composed of scales which are uniflorous, ovate, concave, acute, and ciliated.

The *Corolla* is none.

The *Filaments* are for the most part ten, very small. The *Antheræ* are twin, compressed, villose at the apex, and two valved.

* The *Female Flowers* are disposed in a long Katkin, on the same plant.

The *Calyx* is a common Katkin loosely imbricated, consisting of *Scales* which are lance-shaped, villose, reflexed at the apex, and one flowered.

The *Corolla* is cup-form, of one leaf, six cleft, with two divisions larger.

The

The *Germen* are two, very short, each having two *Styles*, which are long, capillary and coloured. The *Stigmas* are simple. The *Seed-vessel* none. The *Katkin* being enlarged and containing a seed at the base of each scale.

The *Seed* is a nut, ovate and angled.

Obs. The seeds of the *Carpinus Betulus* are contained within the base of the concave calycine scale: but of the *Ostrya* within the inflated scale.

The Species are, with us,

1. *CARPINUS Betulus virginiana.* *American Hornbeam.*

This grows common by most of our river and creek sides, rising with a strong, woody, somewhat angular stem, to the height of ten or fifteen feet; spreading into many branches, with oval, pointed leaves, sawed on their edges. The flowers are produced at the ends of the young shoots, in loose, leafy katkins, and are succeeded by small, hard, angular seeds.

2. *CARPINUS Ostrya.* *The Hop-Hornbeam.*

This tree often grows larger and more upright than the former, the wood is tougher, the branches fewer and more erect. The leaves somewhat resemble those of the Elm. The male katkins are produced at the extremity of the branches, they are set the preceding fall, and remain all winter. The female flowers are produced in inflated chaffy katkins, much resembling a hop, from whence it acquired its name. There is a variety of this called the *Virginian flowering Hop-Hornbeam*, which I have not seen.

CASSINE.

CASSINE.

CASSINE, or SOUTH-SEA TEA-TREE.

Class 5. Order 3. Pentandria Trigynia.

THE *Empalement* is five-parted, beneath, very small, obtuse, and permanent.

The *Corolla* is five-parted and spreading; the divisions are somewhat ovate, obtuse, and larger than the calyx.

The *Filaments* are five, awl-shaped and spreading. The *Antheræ* are simple.

The *Germen* is above and conical. The *Style* none. The *Stigmas* three, reflexed and obtuse.

The *Seed-vessel* is a berry, roundish, three-cell'd and umbilicated with the Stigmas.

The *Seeds* are solitary and somewhat ovate.

The Species are,

CASSINE Paragua. *Ever-green Cassine, Yapon, or South-Sea Tea-tree.*

This grows naturally in Carolina and some parts of Virginia, but chiefly near the sea; and rises to the height of ten or twelve feet, sending out branches from the ground upward, garnished with Ever-green spear-shaped leaves, placed alternately: they are of a deep green colour, of a thick consistence and a little notched on their edges. The flowers are produced in close whorls, round the branches, at the footstalks of the leaves; they are white, and are succeeded by red berries, with three cells, each containing a single seed.

CEANOTHUS.

CEANOTHUS.

The NEW-JERSEY TEA-TREE.

Class 5. Order 1. Pentandria Monogynia.

THE *Empalement* is of one leaf, top-shaped: the border is five-parted, acute, and incurved; and permanent.

The *Corolla* is composed of five petals, equal, roundish, hook-facted, compressed, very obtuse, spreading, less than the calyx, with claws the length of the petal, rising from the incisions of the calyx.

The *Filaments* are five, awl-shaped, erect, opposite to the petals, and longer than the corolla. The *Antheræ* are roundish.

The *Germen* is three cornered. The *Style* is cylindrical, half three-cleft, and the length of the *Stamina*. The *Stigma* obtuse.

The *Seed-vessel* is a berry, which is dry, three fruited, three-cell'd, obtuse, and set with tubercles.

The *Seeds* are solitary and ovate.

The Species with us, but one, viz.

CEANOTHUS americanus. *American Ceanothus, or New-Jersey Tea-tree.*

This is a low shrub, growing common in most parts of North America; seldom rising above four or five feet high, and sending out branches on every side from the ground upward, which are garnished with oval, pointed leaves, having three longitudinal veins, running from the foot-stalk to the point, diverging from each other in the middle; they are placed opposite, and are of a light green colour. The flowers are produced at the extremity of the shoots, in a close kind of *Thyrusus*; they are of a white colour and when in bloom make a fine appearance. A decoction of the roots of this shrub is esteemed a certain cure, not only in slight Gonorrhæa's,

rhæa's, which it stops in two or three days, without any bad consequences; but also in the most inveterate Venereal complaints. The leaves are dried and used by some as a substitute for Bohea Tea, from which it acquired its name.

CELASTRUS.

The STAFF-TREE.

Class 5. Order 1. Pentandria Monogynia.

THE *Empalement* is of one leaf, half-five cleft, plane, and very small: the divisions are obtuse and unequal.

The *Corolla* has five petals, ovate, spreading, sessile, equal and reflexed at their margins.

The *Filaments* are five, awl-shaped and the length of the corolla.

The *Antheræ* are very small.

The *Germen* is very small, immersed in the receptacle, which is large, plane, and marked with ten streaks. The *Style* is awl-shaped and shorter than the stamina. The *Stigma* is obtuse, and three-cleft.

The *Seed-vessel* is a Capsule, coloured, ovate, obtusely three-cornered, gibbous, three cell'd, and three valv'd.

The *Seeds* are few, ovate, coloured, smooth, and half covered with an Arillus, four parted at the mouth, unequal and coloured.

The Species but one, with us, viz.

CELASTRUS scandens. *American Climing Staff-tree.*

This grows naturally in many parts of North-America, rising with a twining woody stem to the height of ten or fifteen feet when supported, sending out many slender flexible branches, cloathed with oblong pointed leaves, a little sawed on their edges. The flowers come out from the sides of the branches in loose bunches; they are of an herbaceous

ous colour, and are succeeded by roundish three-cornered capsules, of a pale, or yellowish red colour when ripe; which spread open in three parts, disclosing their seeds after the manner of the Spindle Tree. The seeds are hard, oval and covered with a thin red pulp. It makes a very fine appearance when covered with ripe fruit.

CELTIS.

The NETTLE-TREE.

Class 23. Order 1. Polygamia Monoecia.

*THE *Hermaphrodite* flowers are solitary and superior.

The *Empalement* is one-leaved, and five-parted; the divisions ovate, spreading and withering.

The *Corolla* is wanting.

The *Filaments* are five, very short, hid by the *Antheræ*, but after the discharge of the farina, longer. The *Antheræ* are oblong, thickish, quadrangular, and four-furrowed.

The *Germen* is ovate, sharp-pointed, and the length of calyx.

The *Styles* are two, spreading, variously inflexed, awl-shaped, very long, and downy on all sides. The *Stigmas* are simple.

The *Seed-vessel* is a drupe, roundish and of one cell.

The *Seed* is a nut, which is roundish.

*The *Male* flowers are in the same plant, and inferior.

The *Empalement* is six-parted, otherwise as the *Hermaphrodite*.

The *Corolla* is wanting.

The *Filaments* are as in the *Hermaphrodite*.

The Species with us, but one, viz.

CELTIS occidentalis. *American Yellow-fruited Nettle-tree.*

This grows naturally in many parts of North-America. It delights in a rich, moist soil, in which it becomes a large tree, rising with a straight stem, the bark of which, in young trees, is sometimes smooth

smooth and of a dark colour, but as they advance becomes rougher and of a lighter colour. The branches are set thick on every side, and garnished with oblique oval leaves, ending in points and sawed on their edges. The flowers come out opposite to the leaves, upon pretty long footstalks; they are small and make but little appearance, and are succeeded by round, hard berries, about the size of a small pea, of a yellow colour and sweet taste when ripe. The juice of the fruit is said to be astringent and to give ease in violent Dysenteries.

CEPHALANTHUS.

The BUTTON-TREE.

Class 4. Order 1. Tetrandria Monogynia.

THE *Common Empalement* is none, but a globose receptacle, collecting many florets into a little head.

The *Proper Empalement* is one leaved, funnel-form and angular; the border four-cleft.

The *Universal Corolla* is equal. The *Proper* of one petal, funnel-form and acute.

The *Filaments* are four, inserted in the corolla, and shorter than the border. The *Antheræ* are globose.

The *Germen* is beneath. The *Style* longer than the corolla. The *Stigma* globose.

The *Seedvessel* none.

The *Seeds* are solitary, long, lessened at the base, pyramidal and wooly.

The *Common Receptacle* is round and villose.

The Species but one, viz.

CEPHALANTHUS occidentalis. *Button-tree.*

This shrub grows pretty common by creek sides and ponds, rising to the height of six or eight feet; growing very crooked, and sending out several branches,

branches, which grow opposite. The leaves are also placed opposite and often, upon young shoots, by three's; they are near three inches long and one and a quarter broad, having a strong vein running longitudinally through them, they are of a light green and their footstalks change to a reddish colour next the branches. The branches are terminated with globular heads, composed of many small flowers, of a whitish colour.

C E R C I S.

The J U D A S T R E E.

Class 10. Order 1. Decandria Monogynia.

THE *Empalement* is of one leaf, very short, bell-shaped, gibbous beneath, and melliferous: the mouth is five toothed, erect and obtuse.

The *Corolla* is ten petal'd, inserted in the calyx, and counterfeiting a papilionaceous corolla.

The *Wings*, are two petals, bent back, and affixed by long claws.

The *Standard*, one petal, roundish, clawed, under and shorter than the wings.

The *Keel*, two petals, joining in a heart-shaped figure, including the parts of fructification and affixed by claws.

The *Nectarium*, a gland, style form, under the germen.

The *Filaments* are ten, distinct, awl-shaped, declined, of which four are longer; and covered. The *Antheræ* are oblong, incumbent, and arising.

The *Germen* is linear-lanced and pedicel'd. The *Style* is of the length and situation of the stamina. The *Stigma* is obtuse and arising.

The *Seed-vessel* is a legumen or pod, which is oblong, acute, oblique pointed, and of one cell.

The *Seeds* are several, roundish and joined to the superior suture.

The Species with us, but one, viz.

CERCIS

CERCIS canadensis. *Red-bud, or Judas Tree.*

This grows naturally in several parts of North-America, rising to the height of ten or fifteen feet, with a pretty strong trunk covered with a darkish coloured bark; dividing upwards into several irregular branches, furnished with heart-shaped leaves, smooth upon their upper surface and edges, but a little downy underneath, having pretty long footstalks. The flowers come out upon the branches upon all sides, many arising from the same point, with short footstalks; they are of a fine red colour and coming out before the leaves, make a beautiful appearance. There is said to be a variety of this in Carolina, with small flowers.

CHIONANTHUS.

The **SNOW-DROP, or FRINGE TREE.**

Class 2. Order 1. **Diandria Monogynia.**

THE *Empalement* is of one leaf, four-parted, erect, sharp-pointed and permanent.

The *Corolla* is one petal'd and funnel-form. The *tube* is very short, spreading, and the length of the calyx. The *border* with four divisions, which are linear, erect, acute, oblique, and very long.

The *Filaments* are two, very short, awl-shaped and inserted in the tube. The *Antheræ* are heart-shaped, and erect.

The *Germen* is ovate. The *Style* simple and the length of the calyx. The *Stigma* is obtuse and three-cleft.

The *seed-vessel* is a drupe, roundish or oval and of one cell.

The *Seed* a striated nut.

Obs. The number of *stamina* is often three or four.

We have but one Species in America, viz.

CHIONANTHUS

CHIONANTHUS virginica. Virginian Snow-drop Tree.

This shrub grows naturally in several places in North America, in a moist soil; rising to the height of fifteen or twenty feet, spreading into many branches, covered with a light coloured bark. The leaves are large, oblong and entire, placed nearly opposite. The flowers are produced towards the extremity of the shoots of the former year, upon short, leafy, common footstalks; at the bosom of the leaves of which, the proper footstalks come out, and are divided for the most part into three parts, but often more; each sustaining one small flower, with four very long, narrow, white petals; which, when fully grown, make a beautiful appearance: these are succeeded by oval berries, of a livid blackish colour when ripe, each containing one hard, oblong, pointed seed. The bark of the root of this shrub, bruised and applied to fresh wounds, is accounted by the natives a specific, in healing them without suppuration.

C L E T H R A.

C L E T H R A.

Class 10. Order 1. Decandria Monogynia.

THE *Empalement* is of one leaf, five-parted; the leaves are ovate, concave, erect and permanent.

The *Corolla* consists of five petals, oblong, broader without, a little spreading, and longer than the calyx.

The *Filaments* are ten, awl-shaped, and the length of the corolla. The *Antheræ* oblong-erect, gaping at the apex.

The *Germen* is roundish. The *Style* is thread-form, erect, permanent, and increasing. The *Stigma* is three-cleft.

The *Seed-vessel* is a capsule, roundish, covered with the calyx, three-cell'd and three-valv'd.

The *Seeds* are many and angled.

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There

There is but one Species of this Genus, viz.

CLETHRA alnifolia. *Alder leaved Clethra.*

This shrub grows common in Maryland, Virginia, and Carolina, in moist ground and by rivulets; rising to the height of six or eight feet, dividing into many branches, clothed with wedge-shape, oval, veined leaves, sawed on their edges, resembling those of the Alder but longer; which are placed alternately. The flowers are produced at the extremity of the branches, in long close bunches; they are of a white colour, and when in full bloom make a very fine appearance.

C O R N U S.

The CORNEL, or DOGBERRY-TREE.

Class 4. Order 1. Tetrandria Monogynia.

THE Calyx consists of an *Involucrum* of four leaves, many flowered: the leaves ovate, coloured, and deciduous; the opposite interior somewhat longer and narrower.

An *Empalement*, very small, four-toothed, above and deciduous.

The *Corolla* consists of four petals, oblong, acute, plane, and smaller than the *Involucrum*.

The *Filaments* are four, awl-shaped, erect, and longer than the corolla. The *Antheræ* are roundish and incumbent.

The *Germen* is roundish and beneath. The *Style* filiform and the length of the corolla. The *Stigma* is obtuse.

The *Seed-vessel* is a drupe, or stone-fruit, roundish and umbilicated.

The *Seed*, a nut, heart-shaped, or oblong, and two cell'd.

Obs. The *Involucrum* is wanting in most of our Species.

The Species are, with us,

I. CORNUS

1. CORNUS alterna. *Alternate branched, or
Female Virginian Dogwood.*

This grows to the height of twelve or fifteen feet, dividing upwards into many branches, which are covered with bark of a striated or streaked appearance. The small branches are placed alternate, bending at each division. The leaves are entire, oval, sharp-pointed, and much veined. The flowers are produced in clusters at the extremity of the branches, and are succeeded by roundish berries of a dark purple colour when ripe. The small branches being alternate, afford a distinguishing mark for this species.

2. CORNUS candidissima. *Swamp American
Dogwood.*

This shrub grows to the height of six or eight feet, mostly in moist or swampy places; and is covered with a whitish bark. The branches are placed opposite, and also the leaves, which are lance-shaped and pointed, and of a whitish colour. The flowers are produced at the extremity of the branches, in clusters, and are succeeded by whitish succulent berries.

3. CORNUS florida. *Male Virginian Dogwood.*

This rises with a strong stem to the height of twelve or fifteen feet, dividing into many spreading branches, which are sometimes placed opposite, but often by four's, arising from opposite points and regularly disposed. The leaves are oval, pointed, veined and entire. The flowers are produced at the extremity of the small branches, in clusters; having a common
involucrum

involucrum of four large white leaves, which are generally end-bitten and a little coloured at their extremities, and one opposite pair, rather longer and narrower than the other. The flowers within are succeeded by oblong, red berries. This flowers in May and is deservedly ranked amongst the beautiful flowering shrubs. The bark of this kind has been used with some success as a substitute for the Peruvian Bark. And to its top, regular disposed shoots, our spinsters are often indebted for their distaffs.

4. CORNUS fanguinea. *American Red-rod* *Cornus.*

This grows in a moist soil, to the height of eight or ten feet, generally many stems arising from the same root. The bark of the young shoots is very smooth, and of a beautiful dark red colour. The branches are placed opposite, and also the leaves, which much resemble the first and third kinds above described. The flowers are produced in clusters at the ends of the branches, of a whitish colour; and are succeeded by succulent berries of a bluish colour when ripe.

C O R Y L U S.

The HAZEL, or NUT-TREE.

Class 21, Order 8. Monoecia Polyandria.

*THE Male flowers are disposed in a long Katkin.

The *Calyx*, a common Katkin, imbricated on all sides, and cylindrical; consisting of *Scales*, which are uniflorous, narrowed at the base, at the apex broader, more obtuse, inflexed and three-cleft: the middle divisions of equal length, but twice the width of and covering the rest.

The

The *Corolla* is wanting.

The *Filaments* are eight, very short, joined to the interior side of the calycine scale. The *Antheræ* are oblong-ovate, shorter than the calyx, and erect.

* The *Female* flowers are remote from the *Male* in the same plant, sitting close and included in a bud.

The *Empalement* is of two leaves, coriaceous, torn at the margin, erect, and the length of the fruit; at the time of florescence, scarce manifest for its smallness.

The *Corolla* none.

The *Germen* is roundish and very small. The *Styles* two, bristly, coloured, and much longer than the calyx. The *Stigmas* are simple.

The *Seed-vessel* none.

The *Seed*, a nut somewhat ovate, shaved at the base, somewhat compressed and pointed at the apex.

The Species with us are,

1. *CORYLUS americana. American Hazelnut.*

This grows very common in a rich, loose, moist soil; spreading far by its roots, and rising at first with a simple, erect stem; which, as it grows old, is divided into a few irregular branches, cloathed with oval, pointed leaves, sawed on their edges. The Male katkins are produced at the ends of the branches, and the Female parts a little beneath them, often many together, at other times singly; and are succeeded by seed-vessels, roundish at the base, but lengthened out into a leafy, fringed expansion, parted at the extremity; each containing one nut.

2. *CORYLUS cornuta. Dwarf Filbert, or Cuckold-nut.*

This kind much resembles the other, except in size, seldom growing above three or four feet high; and also in having its nuts single upon the branches,
and

and their husks or seed-vessels smaller and lengthened out into a point or horn, and closely embracing its nuts.

C R A T Æ G U S.

The WILD SERVICE-TREE.

Class 12. Order 2. Icosandria Digynia.

THE *Empalement* is one leaved, concave-spreading, five-toothed and permanent.

The *Corolla* is of five petals, roundish, concave, fitting close and inserted in the calyx.

The *Filaments* are twenty, awl-shaped, and inserted in the calyx.

The *Antheræ* are roundish.

The *Germen* is beneath. The *Styles* are two, thread-form, and erect. The *Stigmas* are headed.

The *Seed-vessel* is a berry, fleshy, roundish, and umbilicated.

The *Seeds* are two, longish, distinct and cartilaginous.

Botanical writers enumerate several Species of this Genus, native of these states; but I believe, upon more strict examination, they will chiefly be found to belong, with more propriety, to the *Mespilus*. See *Mespilus*.

C U P R E S S U S.

The CYPRESS TREE.

Class 21. Order 9. Monoecia Monodelphia.

* **T**HE *Male* flowers are collected in an ovate Katkin.

The *Calyx*, a common ovate Katkin, compounded with sparsed flowers, consisting of *Scales* which are uniflorous, roundish, sharp-pointed on the fore part, targetted, opposite and in number about twenty.

The *Corolla* none.

The *Filaments* are wanting; but four *Antheræ* are joined, in their stead, to each scale of the katkin.

* The *Female* flowers are collected in a roundish cone, on the same plant.

The

The *Calyx*, a common cone, which is compounded of from eight to ten florets, consisting of *Scales*, which are uniflorous, opposite, ovate, convex beneath and gaping.

The *Corolla* none.

The *Germin* is scarce observable. In the place, perhaps, of Styles, there are numerous dots within each calycine scale, which are truncated, and concave at the apex.

The *Seed-vessel*, none but the globose cone, which is shut, but gaping with orbiculate, angled, and targetted scales.

The *Seed* is a nut, which is angled, sharp-pointed, and small.

The Species with us, are,

1. *CUPRESSUS disticha.* *Virginian deciduous Cypress-Tree.*

This grows naturally in swampy, low ground; and becomes a lofty tree, of seventy or eighty feet in height, and three or four feet in diameter; dividing, towards the top, into many branches, clothed with small linear leaves, coming out upon all sides, yet inclining to but two sides of the small branches; and falling off in the autumn. The cones, of this kind, are roundish and near an inch in diameter. The timber is valuable for many uses, affording great quantities of boards, shingles, &c.

2. *CUPRESSUS Thyoides.* *Maryland Blue-berried Cypress.*

This, by some means, has obtained the name of a dwarf, yet it becomes a large tree, nearly equal in height and diameter to the former. The branches are covered with small ever-green leaves, much resembling those of the *Arbor Vitæ*. The cones are about the size of Juniper-berries, a little angular and having many cells. The timber of this is softer than the other kind and applied to more general use,
being

being durable and not liable to be eaten by worms; it affords excellent planks, &c. for ship building; also posts, rails, boards, shingles, &c. &c. and to it our dairy women are indebted for tubs, pails, churns, &c.

D I O S P Y R O S.

The DATE PLUM, or PERSIMMON TREE.

Class 23. Order 2. Polygamia Dioecia.

*THE *Hermaphrodite* female.

The *Empalement* is composed of one leaf, four-cleft, large, obtuse and permanent.

The *Corolla*, of one petal, pitcher-shape, larger, and four-cleft; the divisions acute and spreading.

The *Filaments* are eight, bristly, short and lightly inserted in the receptacle. The *Antheræ* are oblong and effæte.

The *Germen* is roundish. The *Style* one, half four-cleft, permanent and longer than the stamina. The *Stigmas* are obtuse and two-cleft.

The *Seed-vessel* is a berry, which is globous, large, eight-cell'd, and sitting on the large spreading calyx.

The *Seeds* are solitary, roundish, compressed, and very hard.

*The *Male* in distinct plants.

The *Empalement* consists of one leaf, four-cleft, acute, erect, and small.

The *Corolla* of one petal, pitcher-shape, coriaceous, four-cornered and four cleft: the divisions are roundish and revolute.

The *Filaments* are eight, very short and inserted in the receptacle. The *Antheræ* are double, long, and acute; the interior shortest.

The *Pistillum*, is the rudiment of a germen.

The Species with us, but one, viz.

DIOSPYROS virginiana. *Virginian Persimmon Tree.*

This grows naturally in moist clayey ground, in Pennsylvania and Maryland, as well as Virginia; rising

ing to the height of twenty feet or more, sending out many shortish branches, garnished with entire, oblong, pointed leaves; the flowers are produced upon the small branches, making but little appearance, and are succeeded by large, globular or oblong fruit, which when fully ripe has a sweet agreeable taste. A full grown tree will often yield two bushels or more of fruit, which upon distillation will afford as many gallons of Spirits, allowed to be equal in taste and flavour to West India Rum. Our countrymen have not enough attended to this, but in some places they brew of them a very good Beer. There appears to be varieties of this, some with early ripe large fruit, others with smaller and late ripe.

DIRCA.

LEATHER WOOD.

Class 8. Order 1. Octandria Monogynia.

THE *Empalement* is wanting.

The *Corolla* is one petal'd and clubb'd. The tube is more bellied above. The border none, the margin unequal.

The *Filaments* are eight, capillary, inserted in the middle of the tube, and longer than the corolla. The *Antheræ* are roundish and erect.

The *Germen* is ovate, with an oblique top. The *Style* is thread-form, longer than the stamina and curved at the top. The *Stigma* is simple.

The *Seed-vessel* is a berry of one cell.

The *Seed* is one.

There is but one Species of this Genus, viz.

DIRCA palustris. *Virginian Marsh Leather-wood.*

This is a low shrub, growing in moist shady places, seldom rising more than three or four feet high,
F
spreading

spreading into a head, with many small and very flexible branches, covered with a light coloured bark, and cloathed with oval smooth leaves, of a pale green colour. The flowers are produced at the extreme ends of the former year's shoots; they are of an herbaceous colour and make but little appearance, but are succeeded by oval berries, changing somewhat yellowish when ripe.

EPIGÆA.

TRAILING ARBUTUS.

Class 10. Order 1. Decandria Monogynia.

THE *Empalement* is double, approximated, and permanent. The *exterior* consists of three leaves, which are ovate-lanced, and sharp pointed; the exterior largest.

The *interior* is five-parted and erect; a little longer than the exterior: the leaf-lets are lanced and sharp pointed.

The *Corolla* is composed of one pitcher-form petal. The tube is cylindrical, rather longer than the calyx, and hairy within. The border is spreading and five-parted, with ovate-oblong lobes.

The *Filaments* are ten, thread-form, the length of the tube and affixed to the base of the corolla. The *Antheræ* are oblong and acute.

The *Germen* is globose and villous. The *Style* is thread-form, and the length of the stamina. The *Stigma* is obtuse and somewhat five-cleft.

The *Seed-vessel* is a capsule, somewhat roundish, depressed, five sided, five cell'd, and five valv'd.

The *Seeds* are many and roundish. The receptacle large and five-parted.

There is but one Species of this Genus, viz.

EPIGÆA repens. *Trailing Arbutus.*

This grows naturally upon northern hills, or mountains, with trailing shrubby stalks, putting out roots at

at their joints. The leaves are oblong, rough and waved on their edges. The flowers are produced at the ends of the branches, in loose panicles, and are of a white colour, mixed with red, dividing at the top into five parts, and spreading open in form of a star.

E U O N Y M U S.

The S P I N D L E T R E E.

Class 5. Order 1. Pentandria Monogynia.

THE *Empalement* is composed of one leaf, five-parted, and plane: the divisions are roundish and concave.

The *Corolla* consists of five petals, ovate, plane, spreading and longer than the calyx.

The *Filaments* are five, awl-shaped, erect, shorter than the corolla, and placed on the germen as a receptacle. The *Antheræ* are twin.

The *Germen* is sharp pointed. The *Style* is short and simple.

The *Stigma* is obtuse.

The *Seed-vessel* is a capsule, succulent, coloured, pentagonal, with five angles, five cells and five valves.

The *Seeds* are solitary, ovate and covered with a berry'd Aril-lus.

Obs. In some species one fifth part of the fructification is taken away.

The Species with us, are,

1. EUONYMUS carolinensis. *Carolinian Spindle Tree.*

This shrub grows to the height of eight or ten feet, dividing into many opposite branches, the young shoots are somewhat quadrangular and marked longitudinally, with green stripes. The leaves are placed opposite, and are oval, sharp pointed, and finely and slightly sawed on their edges, of a deep green

green colour. The footstalks of the flowers come out from the bosom of the leaves of the young shoots, and are generally divided into three parts towards their extremities, the middle division sustaining one, and the two side ones, each three flowers; having four deep purple coloured petals, expanding in form of a cross, and four stamina; these are succeeded by angular furrowed seed vessels, of a beautiful pale red colour when ripe, making a fine appearance after the leaves are fallen off.

2. EUONYMUS latifolius. *Broad-leaved Spindle Tree.*

This shrub very much resembles the former, except the leaves being broader and longer, and of a paler green colour, turning reddish before they fall off. The seed-vessels are rather larger and rounder at the corners or angles, and of somewhat paler colour, as are also the flowers.

3. EUONYMUS sempervirens. *Ever-green Spindle Tree.*

This is of smaller growth than either of the former, seldom rising above six or seven feet, and dividing into many opposite branches, towards the top, which are of a greener colour, and more angular than the other kinds, and garnished with narrower leaves, of a closer texture. The flowers are produced in manner of the former, except each footstalk sustaining generally but three flowers, having five petals, which are of a paler colour, and rounder than either of the former; and are succeeded by roundish capsules closely set with small protuberances, turning of a fine red colour when ripe, and opening into four

four or five parts, disclosing its seeds hanging by fine white threads. This makes a very beautiful appearance in autumn when its fruit are ripe; and from their red appearance obtained the name of the Burning Bush. The young plants retain their leaves all winter. All the species grow naturally in moist, shaded places.

F A G U S.

The B E E C H - T R E E.

Class 21. Order 8. Monoecia Polyandria.

* **T**HE Male flowers are affixed to an Amentaceous receptacle. The Calyx is an *Empalement* of one leaf, bell-shaped, and five-cleft.

The Corolla none.

The Filaments are many (about twelve) the length of the calyx, and bristly. The Antheræ are oblong.

* The Female flowers are contained in buds upon the same plant.

The Calyx, an *Empalement* of one leaf, four-toothed, erect and acute.

The Corolla none.

The Germen is covered by the calyx. The Styles are three, awl-shaped. The Stigmas are simple and reflexed.

The Seed-vessel is a capsule (formerly the calyx) which is roundish, large, set round with soft spines; with one cell and four valves.

The Seeds are two nuts, which are ovate, triangular, three valved and sharp-pointed.

Obs. The Male flowers of the Beech are disposed in a globular form; those of the Chesnut in a cylindrical.

We have but one Species of this Genus, besides the Chesnut and Chinquelin, which are somewhat improperly joined with it, viz.

FAGUS

FAGUS Sylvatica atro-punicea. *American Beech Tree.*

This grows naturally in low, bottom grounds, by river sides, rising sometimes to the height of forty or fifty feet, and to fifteen or eighteen inches in diameter, generally sending out many long branches, garnished with very thin, oval, spear-shaped leaves, sawed on their edges, and remaining late upon the branches. The nuts are eaten by swine. The wood is hard and close grained, and used for making lasts, joiner's tools, &c.

FAGUS-CASTANEA.

The CHESNUT TREE.

THE Characters are nearly the same of the Beech, except the Male flowers being disposed in cylindrical katkins. The Styles more in number and bristly. The Capsules much larger, round, and set very thick with long prickly Spines; containing from one to four or five, but generally two or three nuts, filled with sweet kernel.

The Species of Chesnut, with us, are,

I. FAGUS-CASTANEA dentata. *American Chesnut Tree.*

This often becomes a large tree, growing to the height of sixty or eighty feet, and to four or five feet in diameter, sending out but few branches, garnished with long spear-shaped leaves, toothed or notched on their edges. The timber is used much for rails, splitting free and out-lasting most of our Oaks. The kernel of the nuts are dried and used by some as a substitute for Coffee. The wood is also burnt

burnt into coals for the use of blacksmiths, &c. but not much esteemed for common fuel.

2. FAGUS-CASTANEA pumila. *Dwarf Chestnut Tree, or Chinquepin.*

This seldom rises above eight, ten, or twelve feet, otherwise much resembling the Chestnut in the appearance of its branches and leaves. Its fruit capsules are small, and generally contain but one conical shaped nut. It grows naturally in a light gravelly soil.

F O T H E R G I L L A.

F O T H E R G I L L A.

Class 13. Order 2. Polyandria Digynia.

THE *Empalement* is of one leaf, hairy, and five-toothed at the margin.

The *Corolla* is wanting.

The *Filaments* from sixteen to eighteen, inserted in the calyx, long, incurved and lessened towards the base. The *Antheræ* are minute.

The *Germen* is oblong and villose, ending in two acute *Styles*.

The *Seed-vessel* is a capsule, oblong, of two cells and covered by the calyx.

The *Seeds* are single and oblong.

The Species with us,

FOTHERGILLA Gardeni. *Carolinian Fothergilla.*

This small, but beautiful flowering shrub grows naturally in Carolina, on the borders of savannahs, or near ponds of water; spreading much by its roots. The stalks are slender, rising to the height of two
or

or three feet, generally several from one root, with small, alternate, divaricated branches. The leaves are oval, somewhat toothed towards the apex, and placed alternate. The flowers are produced in spikes terminating the stalks; they are sessile, and each furnished with a bractea or floral leaf, which is ovate, rough externally, longer than the empalement and fitting close at their base; they are produced early in the spring and being thick set, make a beautiful appearance with their long, snowy white stamina. The fruit or seed-vessel very much resembles that of the Hamamalis or Witch Hazel, but is much smaller.

This, in some late Catalogues, has been called *Youngsonia*, in honour of William Young, Botanist, of Pennsylvania; but by Dr. Linnæus, *Fothergilla* in honour of the late Dr. Fothergill of London. It was first sent to Europe, from Carolina, by John Bartram, to his friend P. Collinson, by the title of *Gardenia*.

FRANKLINIA.

FRANKLINIA.

Class 16. Order 5. Monadelphia Polyandria.

THE *Empalement* is of one leaf, five-cleft; the divisions roundish.

The *Corolla* consists of five petals, large, spreading, roundish, narrowed towards the claw, and joined at the base.

The *Filaments* are numerous, awl-shaped, joined beneath in a cylinder, and inserted in the corolla. The *Antheræ* are twin.

The *Germen* is roundish, lightly furrowed. The *Style* cylindrical and longer than the stamina. The *Stigma* obtuse and rayed.

The *Seed-vessel*, a roundish nut with five cells.

The *Seeds* are wedge-form, and several in each cell.

The

The Species one, viz.

FRANKLINIA alatamaha. *Franklinia.*

(Bartram's Catalogue.)

This beautiful flowering, tree-like shrub, rises with an erect trunk to the height of about twenty feet; dividing into branches, alternately disposed. The leaves are oblong, narrowed towards the base, sawed on their edges, placed alternately, and sitting close to the branches. The flowers are produced towards the extremity of the branches, sitting close at the bosom of the leaves; they are often five inches in diameter when fully expanded; composed of five large, roundish, spreading petals, ornamented in the center with a tuft or crown of gold coloured stamina; and possessed with the fragrance of a China Orange. This newly discovered, rare, and elegant flowering shrub, was first observed by John Bartram when on botanical researches, on the Alatamaha river in Georgia, Anno 1760; but was not brought into Pennsylvania till about fifteen years after, when his son William Bartram, employed in the like pursuits, revisited the place where it had been before observed, and had the pleasing prospect of beholding it in its native soil, possessed with all its floral charms; and bearing ripe seeds at the same time; some of which he collected and brought home, and raised several plants therefrom, which in four years time flowered, and in one year after perfected ripe seeds.

It seems nearly allied to the Gordonia, to which it has, in some late Catalogues, been joined: but William Bartram, who first introduced it, believing it to be a new Genus, has chosen to honour it with the name of that patron of sciences, and truly great
and

and distinguished character, Dr. Benjamin Franklin. The trivial name is added from the river, where alone it has been observed to grow naturally. It delights in a loose, sandy and moist soil.

F R A X I N U S.

The A S H - T R E E.

Class 23. Order 2. Polygamia Dioecia.

THE Flowers are *Hermaphrodite* and *Female* on different trees.

* The *Hermaphrodite*:

The *Calyx* none; or an *Empalement* of one leaf, four-parted, erect, acute, and small.

The *Corolla* none; or of four petals, linear, long, acute, and erect.

The *Filaments* are two, erect and shorter than the corolla. The *Antheræ* are erect, oblong, and four furrowed.

The *Germen* is ovate and compressed. The *Style* cylindrical and erect. The *Stigma* thickish and two cleft.

The *Seed-vessel* none besides the crust of the seed.

The *Seed* is lanced, compressed-membranaceous and of one cell.

* The *Female* are the same in every part except wanting the stamina.

The Species are,

1. FRAXINUS americana. *Carolinian or Red Ash.*

This grows to the height of twenty or thirty feet, dividing into several branches, the small ones of which are generally opposite; the leaves are composed of three or four pair of lobes, terminated by an odd one, which are egg-shaped and pointed, their upper surface of a light green colour, their under covered with short white downy hairs. The seeds are broad and of a light colour.

2. FRAXINUS

2. FRAXINUS alba. *American White Ash.*

This tree grows sometimes to the height of forty or fifty feet, and to eighteen inches or more in diameter. It grows much after the manner of the former, only the leaves are broader, and the seeds narrower. The timber of this is used much by Wheelwrights, Chaise-makers, &c. for making shafts, rimming of wheels, &c.

3. FRAXINUS Nigra. *Black Ash.*

This kind grows in moist places, rising to the height of thirty feet or more, covered with a rough, lightish coloured bark, and sending out but few branches. The leaves are chiefly produced at the ends of the branches, and are generally composed of four pair of lobes, and an odd one, which are shaped like those of the other kinds, but are smaller and finely sawed on their edges. The seeds or keys are broad and flat, and of equal width their whole length.

4. FRAXINUS pennsylvanica. *Pennsylvanian Sharp-keyed Ash.*

This kind often grows to the height of thirty feet or more, and is generally thick set with branches towards the top, having leaves much resembling the White Ash. The seeds grow in large panicles, thick set upon the sides of the branches, near their extremities: they are longer and narrower than any of the other kinds, almost terminating in a point at their base. This also affords a valuable wood, which is used for the same purposes as that of the White Ash.

The

The inside bark and keys of Ash, are accounted good to promote urine.

GAULTHERIA.

GAULTHERIA, or MOUNTAIN TEA.

Class 10. Order 1. Decandria Monogynia.

THE *Empalement* is double, approximate and permanent. The *exterior* two leaved and shorter: the leaves semi-ovate, concave and obtuse.

The *interior* one leaved, five-cleft and bell-shaped: the segments semi-ovate.

The *Corolla* is monopetalous, ovate and half five cleft: the border small and revolute.

A *Nectarium* of ten corpuscles, which are awl-shaped, erect, very short, and surrounding the germen within the stamina.

The *Filaments* are ten, awl-shaped, incurved, shorter than the corolla, and inserted in the receptacle. The *Antheræ* are two horned: the horns bifid.

The *Germen* is roundish and depressed. The *Style* cylindrical and the length of the corolla. The *Stigma* is obtuse.

The *Seed-vessel* is a capsule, roundish, obtuse five-sided, depressed, five cell'd, and five valv'd; covered on all sides by the interior empalement, and becoming a roundish coloured berry, pervious at the apex.

The *Seeds* are many, somewhat ovate, angled and bony.

There is but one Species of this Genus, viz.

GAULTHERIA procumbens. *Canadian Gaultheria, or Mountain Tea.*

This is a very small shrubby plant, with slender stems, seldom rising above five or six inches in height; having, at their tops, four or five oval ever-green leaves, which are marked with a few small points or serratures upon their edges. The flowers come out from the bosom of the leaves, of a white colour, and

and are succeeded by small berries of a red colour when ripe. The leaves have been used as a substitute for Bohea Tea, whence the name of Mountain Tea.

GLEDITSIA.

TRIPLE-THORNED ACACIA, or HONEY LOCUST.

Class 23. Order 2. Polygamia Dioecia.

THE Flowers are *Male* and *Hermaphrodite* upon the same plant, and *Female* upon a different plant.

* The *Male* are in a long, compact, cylindrical katkin.

The *Calyx*; a proper empalement of four leaves; the leaves spreading, small and acute.

The *Corolla* consists of three petals, roundish, sessile, spreading, and cup form.

A *Nectarium*, top-shaped, to whose borders the remaining parts of fructification grow.

The *Filaments* are six, thread-form, and the length of the corolla. The *Antheræ* are incumbent, oblong, compressed and twin.

* The *Hermaphrodite* are in the same katkin with the male flowers, and for the most part terminal.

The *Calyx*, an empalement, four leaved, as in the male.

The *Corolla*, four petals, as in the male.

The *Nectarium* as in the male.

The *Stamina* as in the male.

The *Pistillum*, *Seed-vessel*, and *Seeds* as in the female.

* The *Female Flowers* are in a loose katkin, in a different plant.

The *Calyx*; a proper empalement, as in the male, but five leaved.

The *Corolla*, five petals, which are long, acute, and somewhat spreading.

The *Nectaria* are two, very short, like the filaments.

The *Germen* is broad, compressed, and longer than the corolla.

The *Style* is short and reflexed. The *Stigma* is thick and the length of the style, to which it is adjoined, growing hairy above.

The *Seed-vessel* is a legumen or pod, very large, broad, and much compressed, with many transverse partitions: with isthmuses filled with pulp.

The *Seeds* are solitary, roundish, hard and shining.

The

The Species with, us are,

1. GLEDITSIA spinosa. *Triple-thorned Acacia,*
or Honey Locust.

This tree grows naturally in a rich soil, rising to the height of thirty or forty feet, dividing into many branches, which, together with the trunk, are armed with long pithy spines of five or six inches in length, sending off lateral ones, some of which are nearly the same length, and generally triple thorned. The branches are garnished with winged leaves, composed of ten, or more pair of small lobes, sitting close to the midrib, of a lucid green colour. The flowers come out from the sides of the young branches in form of katkins, of an herbaceous colour, and are succeeded by crooked, compressed pods, from nine or ten to sixteen or eighteen inches in length, and about an inch and a half or two inches in breadth, of which near one half is filled with a sweet pulp, the other containing many seeds in separate cells. The pods, from the sweetness of their pulp, are used to brew in beer.

2. GLEDITSIA aquatica. *Water Acacia.*

This sort grows naturally in Carolina, and hath much the appearance of the first, but hath fewer spines, which are very short. The leaves are also smaller and the pods oval, containing but one seed.

G L Y C I N E.

PERENNIAL KIDNEY BEAN.

Class 17. Order 3. Diadelphia Decandria.

THE *Empalement* is of one leaf, compressed and two lipped: the upper lip emarginate and obtuse: the lower, longer, acute, and three-cleft; the middle division longest.

The

The *Corolla* papilionaceous, or butterfly shaped.

The *Standard* inverse heart-shaped, the sides deflexed, the back gibbous, the apex emarginate, straight and bent from the keel.

The *Wings* oblong, ovate towards the top, small and bent downwards.

The *Keel* linear, hooked, broader and obtuse towards the point, and bent upwards, pressing against the standard.

The *Filaments* are diadelphous, or one single, and nine conjoined; a little dividing at the top, and revolute. The *Antheræ* are simple.

The *Germen* is oblong. The *Style* cylindrical, bending back in a spire. The *Stigma* obtuse.

The *Seed-vessel* an oblong legumen or pod.

The *Seeds* kidney form.

Obs. *Glycine frutescens* has legumens or pods of two cells.

The shrubby Species with us, is one, viz.

GLYCINE frutescens. *Carolinian Shrubby
Kidney Bean.*

This grows naturally in Carolina, rising with twining shrubby stems, when supported, to the height of ten or fifteen feet. The leaves are winged, and composed of about five pair of small, oval, pointed pinnæ or lobes, smooth and of a pale green on their upper surface, but lighter underneath, having their edges a little reflexed and hairy. The flowers terminate the branches in a close, erect racemus or bunch; they are of a purplish blue colour, and are succeeded by long cylindrical pods of two cells, shaped like those of the scarlet Kidney Bean.

GUILANDINA.

GUILANDINA.

The BONDUC, or NICKAR TREE.

Class 10. Order 1. Decandria Monogynia.

THE *Empalement* is one leaved, bell-shape: the border five parted, equal, and spreading.

The *Corolla* consists of five petals, lanced, concave, squat, equal, somewhat larger than the calyx and inserted in its chaps.

The *Filaments* are ten, awl-shaped, erect, inserted in, and shorter than the calyx: the alternate less. The *Antheræ* are obtuse and incumbent.

The *Germen* is oblong. The *Style* is thread-form and the length of the stamina. The *Stigma* is simple.

The *Seed-vessel* is a legumen or pod, which is rhomboid, convex on the upper future, bellied-compressed, of one cell, distinct, with transverse partitions.

The *Seeds* are bony, globose-compressed, and solitary between the partitions.

Obs. A species of this genus is dioecious.

The Species with us,

GUILANDINA dioica. Canadian dioiceous
Bonduc, or Nickar Tree.

This tree is said to rise, with an erect stem, to the height of thirty feet or more, dividing into many branches, covered with a bluish ash-coloured, smooth bark, garnished with large winged leaves, the lobes of which are ranged alternately, and are oval shaped, very smooth and entire. I have lately received several seeds from Kentucky, supposed to be of this tree, where it is said to grow plenty, and is called the Coffee or Mahogany tree.

HALESIA.

HALESIA.

HALESIA, or SILVER-BELL TREE.

Class 10. Order 1. Decandria Monogynia.

THE *Empalement* is one leaved, very small, above, four-toothed, and permanent.

The *Corolla* is of one petal, bell'd and bellied: with the mouth four-lobed, obtuse and spreading.

The *Filaments* are twelve (rarely sixteen) awl-shaped, erect and somewhat shorter than the corolla. The *Antheræ* are oblong, obtuse and erect.

The *Germen* is oblong and beneath. The *Style* is thread-form and longer than the corolla. The *Stigma* is simple.

The *Seed-vessel* is a nut which is barked, oblong, narrow towards each end, four cornered with membranaceous angles, and two cell'd.

The *Seeds* are solitary.

The Species are,

1. HALESIA diptera. *Two-winged fruited Halesia.*

This grows naturally in Carolina, to the height of twelve or fifteen feet. The bark is beautifully variegated or streaked, much like the striped Maple. The leaves are large and egg-shaped, having smooth footstalks. The fruit is sharp-pointed, having two opposite, large wings, and two very small.

2. HALESIA tetraptera. *Four-winged fruited Halesia.*

This likewise grows in Carolina, and has much the appearance of the former, except the leaves are much smaller, a little sawed on their edges and downy

downy underneath, with glandular footstalks. The flowers are produced upon the small branches, sometimes singly, but often three or four together, upon pretty long footstalks; they are bell-shaped and pendulous, of a white colour, and are succeeded by sharp-pointed fruit, having four wings.

H A M A M E L I S.

W I T C H H A Z E L.

Class 4. Order 2. Tetrandria Digynia.

THE *Calyx* consists of an Involucrum, three-leaved, and three flowered: the two interior leaves are roundish, less, and obtuse; the third outer one is larger and lance-shaped.

A double Empalement: the exterior two leaved, less and roundish; the interior four leaved and erect; the leaves oblong, obtuse, and equal.

The *Corolla* has four petals, which are linear, equal, very long, obtuse, and reflexed.

And a *Nectarium*, of four leaf-lets, truncated, and adjoined to the corolla.

The *Filaments* are four, linear, and shorter than the calyx. The *Antheræ* two horned and reflexed.

The *Germen* is ovate and villose, ending in two Styles, the length of the Stamina. The *Stigmas* are headed.

The *Seed-vessel* none.

The *Seed*, a nut which is ovate, half covered with the calyx, obtuse and furrowed on each side at the apex with small horizontal two horned horns; with two cells and two valves.

We have but one Species of this Genus, viz.

H A M A M E L I S virginiana. *Virginian Witch Hazel.*

This shrub grows naturally in many parts of North America. It hath spreading roots, generally sending up several stalks or stems to the height of eight
or

or ten feet, dividing into several branches, furnished with oval leaves irregularly notched on their edges, and smooth on their upper sides, but downy underneath. The footstalks of the flowers come out singly upon the small branches, each generally supporting three flowers, of an herbaceous colour, and making but little appearance, but remarkable for being in bloom late in the fall after the leaves drop off.

H E D E R A.

I V Y.

Class 5. Order 1. Pentandria Monogynia.

THE Calyx consists of an Involucrum of a simple umbel, very small and many toothed.

And an *Empalement* very small, five toothed and surrounding the germen.

The *Corolla* has five petals, oblong and spreading, with incurved tops.

The *Filaments* are five, awl-shaped, erect and the length of the corolla. The *Antheræ* are bifid at the base, and incumbent.

The *Germen* is top shaped, surrounded by the receptacle. The *Style* is simple and very short. The *Stigma* is simple.

The *Seed-vessel* is a globose berry of one cell.

The *Seeds* are five, large, on one side gibbous, on the other angled.

We have but one Species Native of America, viz.

H E D E R A *quinquefolia.* *American Ivy, or Virginian Creeper.*

This hath a climbing stem, attaching itself to any neighbouring support, and rising often to the height of thirty, forty or fifty feet, sending off branches, furnished with leaves composed of five lobes joined at

at their base, which are egg-shaped and sawed on their edges, having a pretty long common footstalk. This has been used to plant against walls and houses to cover them, but the leaves falling off in winter, the plants make but a poor appearance at that time.

HIPPOPHAË.

SEA BUCK-THORN, or SALLOW-THORN.

Class 22. Order 4. Dioecia Tetrandria.

THE flowers are Male and Female on different plants.

* The Male.

The *Empalement* is one leaved, biparted, bivalve, entire at the bottom: the divisions are roundish, obtuse, concave and erect, meeting with their tops, but gaping at their sides.

The *Corolla* is wanting.

The *Filaments* are four, very short. The *Antheræ* are oblong, angled, and almost the length of the calyx.

* The Female.

The *Empalement* is one leaved, oblong-ovate, tubulous, clubbed, with a two cleft mouth, and deciduous.

The *Corolla* none.

The *Germen* is roundish, and small. The *Style* is simple and very short. The *Stigma* thickish, oblong, erect, and double the length of the calyx.

The *Seed-vessel* is a globose berry of one cell.

The *Seed* one, roundish.

There is but one Species, with us, viz.

HIPPOPHAË canadensis. *Canadian Sea-Buck-Thorn.*

This rises with shrubby stalks to the height of eight or ten feet, sending out many irregular branches, having a brown bark, silvered over, and garnished with very narrow spear-shaped leaves, of a dark green on their upper side, but hoary underneath, and reflexed

reflexed on their edges like the Rosemary. The flowers come out from the sides of the young branches, fitting very close; the male growing in small clusters, but the female coming out singly; these open in July and make but little appearance; they are succeeded by roundish berries, which ripen in autumn, and are said to be purgative.

HYDRANGEA.

HYDRANGEA.

Class 10. Order 2. Decandria Digynia.

THE *Empalement* is one leaved, five toothed, permanent, and small.

The *Corolla* consists of five petals, equal, roundish, and larger than the calyx.

The *Filaments* are ten, longer than the corolla, the alternate of which are longer. The *Antheræ* are roundish and twin.

The *Germen* is roundish and beneath. The *Styles* are two, short, and distant. The *Stigmas* are obtuse and permanent.

The *Seed-vessel* is a capsule, roundish, twin, two beaked with the double style, angled with many nerves, crowned with the calyx, two cell'd, with a transverse partition, and gaping with a passage between the horns.

The *Seeds* are numerous, angled, sharp pointed, and very small.

There is but one Species of this Genus, viz.

HYDRANGEA frutescens. *Virginian Shrubby Hydrangea.*

This hath a spreading woody root, from which are produced, generally several soft, pithy, ligneous stalks, rising to the height of about three feet, garnished at each joint with two oblong, heart-shaped, pointed leaves, sawed on their edges, and having many veins. The flowers are produced in form of
a co-

a corymbus, at the tops of the stalks, they are of a white colour, and are succeeded by small capsules.

HYPERICUM.

St. JOHN'S WORT.

Class 18. Order 3. Polyadelphia Polyandria.

THE *Empalement* is five parted: the divisions are somewhat ovate, convex, and permanent.

The *Corolla* has five petals, oblong-ovate, obtuse, spreading, and marked according to the motion of the sun.

The *Filaments* are numerous, capillary, joined at the base into five or three parts or bodies. The *Antheræ* are small.

The *Germen* is roundish. The *Styles* are three (sometimes one, two, and five) simple, distant, and the length of the stamina.

The *Stigmas* are simple.

The *Seed-vessel* is a roundish capsule; with cells according to the number of the *Styles*.

The *Seeds* are many and oblong.

The Species growing shrubby, with us,

HYPERICUM kalmianum. *Virginian Shrubby Hypericum.*

This grows naturally in low wet places, rising with shrubby stalks to the height of three or four feet, with opposite angular branches. The leaves are smooth and shaped like those of Rosemary or Lavender. The flowers terminate the branches in small divided clusters of three or seven flowers; they have each five very slender styles, and are succeeded by oval, pointed capsules, filled with small seeds.

I L E X.

I L E X.

The HOLLY-TREE.

Class 4. Order 3. Tetrandria Tetragynia.

THE *Empalement* is four toothed, very small and permanent. The *Corolla* consists of one petal, four-parted and plane: the divisions are roundish, concave, spreading, pretty large, and cohering by claws.

The *Filaments* are four, awl-shaped, and shorter than the corolla. The *Antheræ* are small.

The *Germen* is roundish. The *Style* none. The *Stigmas* are four and obtuse.

The *Seed-vessel* is a berry, roundish and four cell'd.

The *Seeds* are solitary, bony, oblong, obtuse, gibbous on one side and angled on the other.

Obs. The flowers are in some species male upon one plant, and female and hermaphrodite upon a different plant.

The Species with us, are,

1. ILEX Aquifolium. *American Common Holly.*

This grows in Maryland, New Jersey, &c. generally in moist ground, rising to the height of fifteen or twenty feet, with an erect stem, covered with a greyish coloured smooth bark, and furnished with pretty many branches, which are garnished with thick, hard, ever-green leaves, waved on their edges and indented, each point terminating in a stiff prickly spine. The flowers are produced upon pretty long footstalks, often three parted from the sides of the branches, of a white colour, having often five or six stamina, and the corolla divided into as many parts, and are succeeded by roundish berries, which when full ripe are red. Of the bark of common Holly is made Birdlime, which is better than that made of Mistletoe.

2. ILEX

2. ILEX Cassine. *Daboon, or Carolinian Holly.*

This grows naturally in Carolina, rising with an upright branching stem to the height of eighteen or twenty feet. The bark of the stem is of a brown colour, but that of the branches and young shoots green and smooth. The leaves are spear-shaped, above four inches long and one and a quarter broad toward the base, of a light green colour and thick consistence, with their upper parts sawed on the edges, each serrature ending in a small sharp spine. The flowers come out in thick clusters from the sides of the branches, they are white and like those of the common Holly, but smaller, and are succeeded by small roundish red berries.

3. ILEX canadensis. *Canadian, or Hedge-hog Holly.*

The leaves of this kind are not so long as those of the Common Holly, but are armed with stronger spines standing closer together, their upper surfaces are also set very close with short prickles, from whence it obtained the name of Hedge-hog Holly. It grows naturally in Canada. There are said to be two varieties of this with variegated leaves, one of which is yellow, the other white.

I T E A.

I T E A.

Class 5. Order 1. Pentandria Monogynia.

THE *Empalement* is one leaved, five cleft, erect, sharp pointed, very small, and permanent: the divisions are acute and coloured.

The

The *Corolla* has five petals, lance-shaped, long and inserted in the calyx.

The *Filaments* are five, awl-shaped, erect, the length of the corolla, and inserted into the calyx. The *Antheræ* are roundish and incumbent.

The *Germen* is ovate. The *Style* is cylindrical, permanent, and the length of the *Stamina*. The *Stigma* is obtuse.

The *Seed-vessel* is a capsule, ovate, much longer than the calyx, pointed with the style, with one cell and two valves, of two joined together, gaping at the top.

The *Seeds* are numerous, very small, oblong, and shining.

There is but one Species of this Genus, viz.

ITEA virginica. Virginian Itea.

This shrub grows naturally in Maryland, Virginia, &c. near streams of water, or in moist places; rising to the height of eight or ten feet, and dividing into several branches, which are garnished with spear shaped leaves, placed alternately, slightly sawed on their edges, and of a light green colour. The flowers are produced at the extremity of the same year's shoots, in erect spikes of three or four inches in length; they are white, and make a fine appearance when in bloom, which is a little before harvest time.

JUGLANS.

The WALNUT-TREE.

Class 21. Order 8. Monoecia Polyandria.

THE *Male* and *Female* Flowers are separate upon the same tree.

* The *Male*, are disposed in an oblong katkin.

The *Calyx* is a common katkin, on all sides imbricate-sparsed, and cylindrical; consisting of scales which are uniflorous, singly affixed in the exterior center to each corolla, and turned outward.

The *Corolla* is six-parted, elliptic, equal, and plane: the divisions are somewhat erect and concave, pedicell'd and inserted in the interior center of the corolla, and rachis.

The *Filaments* are many, (eighteen) very short. The *Antheræ* are erect, sharp pointed, and the length of the calyx.

* The *Female* are without a katkin, two or three together, and sitting close, in the same plant.

The *Empalement* is four cleft, erect, very short, crowning the germen, and vanishing.

The *Corolla* is four parted, acute, erect, and a little larger than the calyx.

The *Germen* is oval, large, and beneath. The *Styles* are two, very short. The *Stigmas* are very large, clubbed, reflexed, and torn above.

The *Seed-vessel* is a drupe, or capsule, dry, oval, large and one cell'd.

The *Seed* is a nut very large, roundish, netted with furrows, and half four cell'd. The *Kernel* is four lobed and variously furrowed.

The Species (or chiefly Varieties according to Weston) with us, are,

1. JUGLANS nigra. Round black Virginian Walnut.

This tree often rises to the height of fifty or sixty feet, and to three feet or more in diameter, covered with a dark furrowed bark, and dividing into many branches, furnished with winged leaves, composed of ten or twelve pair of lobes, and an odd one; these are smooth, oblong, sharp pointed and sawed on their edges; and upon being bruised emit a strong aromatic flavour, as doth also the external covering of the fruit. The fruit are round, their covering pretty smooth, and softish when fully ripe. The nuts themselves are hard, netted and furrowed, containing sweet oily kernel.

2. JUGLANS

2. JUGLANS nigra oblonga. *Black oblong fruited Walnut.*

This tree resembles the former so as scarcely to be distinguished from it, except by its fruit, which is oblong or oval; the shells or coverings are rougher, harder, and of a deeper green colour. The timber of both sorts is much used by Joiners, &c. in making tables, drawers, book and clock-cases, &c. Coffins are also generally made of it. The bark, and outer coverings of the nuts, are used in dying wool, cloth, &c.

There are perhaps some other varieties of these.

3. JUGLANS oblonga alba. *Butter-nut, or White Walnut.*

This often grows to the height of twenty or thirty feet and to eighteen inches or more in diameter, with a smooth light coloured bark. The branches are garnished with leaves composed generally of eight or nine pair of lobes and an odd one, which are villose, oblong egg-shaped, sharp pointed, slightly serrated, and larger than those of the other kinds. The fruit, when ripe, is villous and covered with a viscid clammy substance, by which it almost sticks to the fingers when handled. It is long and somewhat pointed at the ends, and freed of its hull, or covering, is very rough and deeply furrowed, containing a soft, oily, sweet kernel. An extract of the bark of this tree affords a mild and safe cathartic. The bark and shells of the nuts dye a good brown colour, scarcely ever fading.

4. JUGLANS

4. JUGLANS alba acuminata. *Long, sharp-fruited Hickery Tree.*

This tree grows to the height of forty or fifty feet, and to eighteen inches or two feet in diameter. The leaves are generally composed of three or four pair of lobes and an odd one. The nuts with their covers are about two inches in length and above one in diameter. The covers, or hulls, generally open into four parts, disclosing their nuts, which are white, hard and thick shell'd, having seams opposite the divisions of their hulls. The kernel is small and not very sweet.

5. JUGLANS alba minima. *White, or Pig-nut Hickery.*

This generally grows pretty large, sometimes to the height of eighty feet or more, and above two feet in diameter. The bark of young trees is smooth, but when older becomes rough and furrowed. The leaves are generally composed of five pair of lobes and an odd one, which are mostly narrower than those of many other kinds. The fruit is small and roundish, and covered with a very thin husk or covering, opening in divisions. The shell of the nut is also very thin, and easily cracked with the teeth; the kernel plump and full but very bitter. The timber of this is not much esteemed.

6. JUGLANS alba odorata. *Balsam Hickery.*

This tree grows as large as the Pig-nut Hickery, and much like it in appearance. The nuts are small, round, and thin shell'd, the kernel sweet. The branches are slender and flexible. There is, I think, a variety of this, with a rougher furrowed bark, bearing broader leaves and larger nuts, having
thicker

thicker outer covers, as well as inward shells, with the kernel generally small and shrivelled. The timber of both kinds is hard and tough, and used for axle-trees of carriages, &c. mill coggs and rounds, and also for handles, &c. for most implements of husbandry.

7. JUGLANS alba ovata. *Shell-barked Hickery.*

This tree delights in a rich moist soil, generally growing by creeks and rivers, often to the height of seventy or eighty feet, and above two feet in diameter. The bark is rough and shelly or scaly. The leaves are generally composed of two pair of lobes and an odd one, they are narrowed towards the base, oval, and pointed at the extremity, and sawed on their edges. The fruit is roundish, but rather flatted and indented at the ends. The outer cover very thick and dividing into four parts, disclosing its nut, which is not very thick shell'd, containing sweet kernel, preferable to the other kinds. There are several varieties of this in America, some with nuts as large as our common Walnuts.

8. JUGLANS pecan. *The Pecan, or Illinois Hickery.*

This tree is said to grow plenty in the neighbourhood of the Illinois river, and other parts to the westward. The young plants raised from these nuts, much resemble our young Pig-nut Hickerys. The nuts are small and thin shelled.

JUNIPERUS.

JUNIPERUS.

The JUNIPER TREE.

Class 22. Order 12. Dioecia Monodelphia.

THE Flowers are *Male* and *Female* on different plants.

* The *Male*.

The *Calyx* is a conical katkin, consisting of a common rachis or string, to which three flowers are placed in triple opposition, the katkin terminating with the tenth: each flower has for its base a *Scale* which is broad, short, incumbent and affixed to the column by a little footstalk.

The *Corolla* none.

The *Filaments* (in the terminal floret) are three, awl-shaped, and joined beneath in one body; (in the lateral florets scarce manifest.) The *Antheræ* are three, distinct in the terminal floret, but in the lateral joined to the scales

* The *Female*.

The *Empalement* is three parted, very small, adjoining to the germen, and permanent.

The *Corolla* has three petals, permanent, rigid and acute.

The *Germen* is beneath. The *Styles* are three, simple. The *Stigmas* are simple.

The *Seed-vessel* is a berry, fleshy, roundish, the under part marked with three obsolete opposite tubercles, grown from the calyx, the top umbilicated with three small teeth (formerly petals.)

The *Seeds* are three, small, oblong, and bony, convex on one side, and angled on the other.

The Species, with us, are,

1. JUNIPERUS virginiana. *Red Cedar-Tree*.

This tree often grows to the height of fifteen or twenty feet, sending off many diverging branches, covered with leaves something like the Juniper, but much smaller, shorter, and lying closer to the branches. The berries are smaller than those of the Juniper,

Juniper, and covered with a whitish substance, easily rubbing off.

2. JUNIPERUS caroliniana. *Red Carolinian Cedar.*

This tree much resembles the former in size and shape, but the under leaves have somewhat the appearance of Juniper, the upper, of Cypress or Savin. There are said to be other varieties, but their difference in appearance is scarcely observable. The timber affords very good durable posts for fencing, &c.

K A L M I A.

KALMIA, or AMERICAN LAUREL.

Class 10. Order 1. Decandria Monogynia.

THE *Empalement* is five parted, small, and permanent: the segments are somewhat ovate, and acute.

The *Corolla* is of one petal, pitcher-funnel form. The *tube* is cylindrical and longer than the calyx. The *border* with a plane disk, and erect half five cleft circumference; there are ten small nectariferous horns, prominent without, and placed round the corolla from where the border is raised.

The *Filaments* are ten, awl-shaped, somewhat spreading, a little shorter than the corolla, and inserted into its base. The *Antheræ* are simple.

The *Germen* is roundish. The *Style* is thread form, longer than the corolla, and declined. The *Stigma* is obtuse.

The *Seed-vessel* is roundish, depressed, five cell'd and five valv'd. The *Seeds* are numerous.

The Species are,

1. KALMIA

1. KALMIA angustifolia. *Narrow leaved Kalmia.*

This kind delights in moist or swampy places, and rises to the height of two feet or more. The leaves are of a light green colour, and sometimes grow to the size of an inch and a half in length and half an inch in breadth, of an oval shape, and entire. The flowers come out in clusters on every side of the stalks, towards their extremities, and are of a beautiful red colour. This has been called Glaucous leaved Kalmia.

2. KALMIA latifolia. *Broad leaved Kalmia.*

This beautiful flowering shrub rises often to the height of six or eight feet and sometimes to ten or twelve, covered with a lightish coloured rough bark, and generally growing crooked. The leaves are of a dark green colour, thick consistence, lance-shaped and entire, in general about three inches in length and one in breadth. The flowers are produced in clusters at the ends of the branches and are variegated with red when first opening, but change to a whiter colour when expanded. There are very few flowering shrubs comparable to this when in bloom. The leaves are noxious to oxen and sheep, yet the deer eat them with impunity.

L A U R U S.

The B A Y - T R E E.

Class 9. Order 1. Enneandria Monogynia.

THE Empalement is wanting.

The Corolla has six petals, ovate, sharp pointed, concave, and erect: the alternate exterior.

And

And a *Nettarium*, consisting of three tubercles, sharp pointed, coloured, and ending in two bristles, standing round the germen.

The *Filaments* are nine, shorter than the corolla, compressed, obtuse and three-fold in each order. The *Antheræ* are adjoined on each side to the margin of the filaments.

There are two roundish small *Glands* affixed by very short footstalks, to each filament of the inward order, near the base.

The *Germen* is somewhat ovate. The *Style* is simple, equal and the length of the stamina. The *Stigma* is obtuse and oblique.

The *Seed-vessel* is a drupe, oval, sharp pointed, and one cell'd, contained in the calyx.

The *Seed* is a nut of a sharp pointed egg-shape, with a kernel of the same form.

Obs. The flowers are sometimes male and female upon different trees.

The Species, with us, are,

1. LAURUS Benzoin. *The Benjamin-Tree, or Spice-Wood.*

This shrub grows naturally in moist places, and rises often to the height of eight or ten feet, dividing into several branches. The leaves are annual, oval shaped and entire. The flowers are produced from the sides of the branches upon short footstalks, often dividing and sustaining from one, to four or five flowers, of a greenish yellow colour; which are succeeded by oval, oblong berries, of a red colour when ripe, but changing to black. The bark, berries, &c. have a strong aromatic smell, much like that of Benzoin, and indeed, by some, is allowed to be the tree, from whence it is produced.

2. LAURUS Borbonia. *Red-stalked Carolinian Bay-Tree.*

This grows naturally in Carolina, and rises with a straight trunk to a considerable height, especially

near the sea-coast. The leaves are sharp pointed and much longer than those of the European Bay; a little wooly underneath, veined transversely, and somewhat reflexed on their edges. The male trees produce their flowers in long bunches from the wings of the leaves; the female, in loose bunches, standing upon long red footstalks, and are succeeded by blue berries sitting in red cups.

The wood is of a very fine grain, proper for cabinet making and other ornamental furniture. It also dyes a beautiful black colour.

3. LAURUS geniculata. *Carolinian Spice Wood Tree.*

This kind so much resembles the Benzoin as to require no further description, except in having berries not of so red a colour.

4. LAURUS Sassafras. *The Sassafras-Tree.*

This tree rises sometimes to the height of twenty or thirty feet, and to twelve or fifteen inches in diameter, but is commonly of much lower growth. The bark of the young shoots is smooth and green, but of the old trunks rough, furrowed and of a lightish colour. It is divided towards the top into many branches, generally crooked, furnished with leaves different in form and size, some being oval and entire, others two or three lobed and of five or six inches in length, and nearly as much in width; of a light green colour and placed alternately upon pretty long footstalks. The flowers are produced at the extremity of the former year's shoots upon long paniced footstalks, and are generally male and female upon different trees. The female are succeeded by oblong, oval berries, of a bluish colour when

when ripe, sitting in red cups, having red footstalks. The roots and wood have been long used as a sudorific, but the bark of the root is by much the strongest, yielding a considerable quantity of hot, aromatic oil; and when powdered and joined with other febrifuges, has been given with success in intermittents, &c. Also used as a tea, is said to promote obstructed menses; but has been blamed for occasioning the head-ach.

LEDUM.

MARSH CISTUS, or WILD ROSEMARY.

Class 10. Order 1. Decandria Monogynia.

THE *Empalement* is of one leaf, very small, and five-toothed.

The *Corolla* consists of five petals, ovate, concave, and spreading.

The *Filaments* are ten, thread-form, spreading and the length of the corolla. The *Antheræ* are oblong.

The *Germen* is roundish. The *Style* thread-form and the length of the stamina. The *Stigma* is obtuse.

The *Seed-vessel* is a capsule, roundish, five-cell'd and gaping in five parts at the top.

The *Seeds* are numerous, oblong, narrow, acute each way and very slender.

The Species with us, but one, viz.

LEDUM thymifolium. *Thyme leaved Marsh Cistus.*

This grows naturally in the Jerseys, in low, moist places. It is a small ever-green shrub, scarcely rising above eighteen inches or two feet in height and divided into several branches. The leaves are very small, entire, of an oblong oval shape, and thick consistence,

consistence, placed close, alternately, and thick upon the branches. The flowers terminate the stalks in short leafy bunches, coming out singly at the bosom of the leaves upon pretty long footstalks; they are small and white but make a fine appearance when in bloom. This has generally been called Thyme-leaved Kalmia.

LIQUIDAMBAR.

LIQUIDAMBAR, or SWEET GUM-TREE.

Class 21, Order 8. Monoecia Polyandria.

* **THE** Male Flowers are numerous in a conical, long, loose katkin.

The *Calyx* is a common Involucrum of four leaves; which are ovate, concave, and falling; the alternate shorter.

The *Corolla* none.

The *Filaments* are numerous, and very short, in a body, plane on one side and convex on the other. The *Antheræ* are erect, twin, four furrowed, and two cell'd.

* The Female flowers are collected in a globe at the base of the male spikes.

The *Calyx* is an Involucrum as in the male, but double.

The *Proper Empalement* is bell-shape, angled, warty, and many joined together.

The *Corolla* none.

The *Germen* is oblong and adjoined to the empalement. The *Styles* are two, awl-shaped. The *Stigmas* joined to these are the length of the style, recurved and downy.

The *Seed-vessel* consists of as many capsules as empalements, which are ovate, oblong, sharp pointed, with one cell and two valves at top; joined in a ligneous globe.

The *Seeds* are few, (one or two) oblong, pointed and shining mixed with many branny corpuscles.

The Species with us, are,

1. LIQUIDAMBAR.

1. LIQUIDAMBAR Styraciflua. *Maple-leaved Liquidambar-Tree, or Sweet Gum.*

This tree grows naturally in low clayey ground, rising with a straight trunk to the height of forty feet or more, sending off many branches, forming a pyramidal head. The leaves are angular, somewhat resembling those of Maple, having five and often seven, pointed, serrated, spreading lobes; and are of a dark green colour. They have a strong, sweet, glutinous substance, exuding through their pores in warm weather, rendering them clammy to the touch. The flowers are produced early in the spring, and are succeeded by globular seed-vessels, composed of many capsules joined at the base, but terminating in long softish spines or points, and containing each one or two oblong compressed, winged seeds, with a great number of furfuraceous particles.

2. LIQUIDAMBAR asplenifolia. *Spleen-wort-leaved Gale, or Shrubby Sweet Fern.*

This is a small shrub, growing naturally upon dry flaty ridges, and seldom rising above three feet high, dividing into several branches, furnished with many oblong leaves, alternately situated, resembling those of Spleen Wort; of a dark green colour, hairy underneath and sitting close to the stalks. The male katkins are produced lying close to the small branches near their ends. The female flowers are in small heads a little beneath them, becoming small burs, generally containing two or more oblong smooth seeds. An infusion of the leaves has been used as an astringent in Diarrhæas, &c.

LIRIODENDRUM.

LIRIODENDRUM.

The TULIP-TREE.

Class 13. Order 7. Polyandria Polygynia.

THE *Calyx* consists of a proper Involucrum of two leaves; which are triangular, plane and deciduous.

And an *Empalement* of three leaves; oblong, concave, spreading, petal-form, and deciduous.

The *Corolla* has six (often more) petals, bell'd: the petals are spatuled, oblong, obtuse and variegated.

The *Filaments* are numerous, shorter than the corolla, linear, and inserted in the receptacle. The *Antheræ* are linear, and adjoined longitudinally to the sides of the filaments.

The *Germen* are numerous, placed in a cone. The *Style* none. The *Stigmas* globose.

The *Seed-vessel* none. The seeds are imbricated in a cone like body.

The *Seeds* are numerous, ending in a lanced scale; near the base of the scale, sending off from the interior side, an acute angle, compressed at the base and acute, by which they are joined to the spindle-shaped receptacle.

The Species with us, are,

LIRIODENDRUM Tulipifera. *Virginian Tulip-Tree.*

This often grows to the size of a large tree, of seventy or eighty feet in height and above four feet in diameter. The bark of young trees is smooth, but as they grow old it becomes furrowed, their lower branches also falling off. The young trees send off many branches, almost from the ground upward, garnished with broad smooth leaves, heart-shaped at the base, but end-bitten, or cut, at the extremity, having two or three pointed lobes, on each side the midrib; of a dark green colour on the upper side,

fide, but lighter and veined underneath; with pretty long footstalks. The flowers are produced at the extremity of the branches in form of a Tulip, composed of six or seven petals, or sometimes more, greenish coloured towards the tops, but marked transversely with red, towards the claws; which are glandular and honey-bearing. The young trees make a beautiful appearance, especially when in flower. We have two kinds of Tulip trees, *viz.* Yellow and White, their difference easily distinguishable by the wood or timber, but perhaps not otherwise. The Yellow is soft and brittle, and much used for boards, heels for shoes, &c. also turned into bowls, trenchers, &c. The white is heavy, tough, and hard, and likewise sawed into joists, boards, &c. for building. The bark of the root is used as an ingredient in bitters, &c.

L O N I C E R A.

HONEYSUCKLE, or WOODBINE.

Class 5. Order 1. Pentandria Monogynia.

THE *Empalement* is five parted, above and small. The *Corolla* is of one petal and tubulous. The *tube* oblong and gibbose. The *border* five-parted; the divisions revolute, and one deeper separated than the rest. The *Filaments* are five, awl-shaped and nearly the length of the corolla. The *Antheræ* are oblong. The *Germen* is roundish and beneath. The *Style* is thread-form and the length of the corolla. The *Stigma* is obtuse-headed. The *Seed-vessel* is a berry, umbilicated and two cell'd. The *Seeds* are roundish and compressed.

The Species, with us, (according to Linnæus's arrangement) are divided as follows, into

* *Honeysuckles*

* *Honeysuckles with a trailing stalk.*

1. *LONICERA caroliniana.* *Carolinian scarlet Trumpet-flowered Honeysuckle.*

This is a variety of the following, only differing in having smaller leaves and flowers.

2. *LONICERA virginiana.* *Virginian scarlet Honeysuckle.*

This hath a shrubby trailing stalk, which requires support, and appears much like the common Honeysuckle, but the shoots are weaker. The inferior leaves are inverse egg-shaped, of a deep green colour on their upper sides, but whitish underneath, fitting close to the branches; but those near the ends of the branches, are joined, forming sometimes a large somewhat quadrangular leaf, but mostly a smaller concave oval one. The flowers are produced in whorls upon a long naked stalk terminating the branches, having long scarlet tubes with short borders. The lower leaves in warm situations are ever-green.

3. *LONICERA sempervirens.* *Ever-green Honeysuckle.*

This is said to grow in Virginia, with strong branches, covered with a purple bark, and garnished with lucid green leaves, continuing their verdure all the year. The flowers are produced in manner of the former, of a bright red on their outsides and yellow within, and continuing in succession from June till autumn.

** *Dwarf*

*** Dwarf Cherries with biflorous footstalks.*

4. LONICERA canadensis. *Canadian dwarf-cherry*
Honeysuckle.

(Bartram's Catalogue.)

This is a native of Canada, rising with an erect shrubby stalk to the height of about five feet. The leaves are oval shaped, entire, of a very thin texture and lucid green colour. The flowers terminate the branches, sitting two upon each footstalk, of a pale yellow colour, streaked with purple, and appearing pretty early in the spring.

**** With an erect stalk, and multiflorous footstalks.*

5. LONICERA Diervilla. *Yellow flowering Diervilla.*

This hath slender shrubby stalks, seldom rising above two feet and a half high, and generally leaning; furnished with somewhat heart-shaped, oblong, sharp-pointed leaves, slightly sawed on their edges, placed opposite, and sitting close to the stalks. The flowers are produced at the extremity and sometimes from the sides of the branches, generally two or three together, upon short footstalks; they are of a cream colour, the inferior segment of the flower somewhat larger and yellower than the others; they are succeeded by oblong capsules, containing small seeds. This grows most natural upon mountains, and spreads much by its creeping roots.

6. LONICERA marylandica. *Maryland scarlet Lonicera.*

This, it is said, grows in Maryland with an upright stalk, furnished with ovate, oblong, sharp-pointed

pointed leaves, which are distinct and fit close to the stalks. The flowers are produced in erect spikes of a scarlet colour.

7. LONICERA Symphoricarpos. *Indian Currants, or St. Peter's Wort.*

This hath a shrubby stalk, which rises from four to five feet high and spreads into many slender branches, garnished with oval entire leaves, somewhat hairy and placed opposite upon short footstalks. The flowers are small and of an herbaceous colour, and are produced upon short, common peduncles, or footstalks, which are placed opposite a considerable distance along, and terminating the branches; upon which they are set very close in whorls, or rather in two opposite rows. A few of these are succeeded by reddish, depressed, hollow and spongy berries; ripening very late, and each generally containing two small round compressed seeds. This often sends off a few weak trailing branches lying upon the ground and taking root, by which it may be easily propagated.

M A G N O L I A.

The LAUREL-LEAVED TULIP-TREE.

Class 13. Order 7. Polyandria Polygynia.

THE *Empalement* is three leaved: the leaves ovate, concave, petal form and deciduous.

The *Corolla* has nine petals, oblong, concave, obtuse, and narrower at the base.

The *Filaments* are numerous, short, sharp pointed, and compressed; inserted beneath the germen in the common receptacle of the styles. The *Antheræ* are linear and adjoined on each side to the margin of the filaments.

The

The *Germen* are numerous, ovate-oblong, covering the clubbed receptacle. The *Styles* are recurved, contorted and very short. The *Stigmas* are from one end of the style to the other, and villose.

The *Seed-vessel* is an ovate cone, covered with *capsules*, which are compressed, roundish, scarce imbricated, crowded, acute, one cell'd, two valv'd, sessile, gaping outward and permanent.

The *Seeds* are solitary, roundish, berried, and hanging by a thread from the bosom of each scale of the cone.

The Species are,

1. *MAGNOLIA acuminata.* *Long leaved Mountain Magnolia, or Cucumber Tree.*

This tree grows sometimes to the height of thirty or forty feet, and to eighteen inches or more in diameter; dividing into several branches towards the top, garnished with large, oblong, sharp-pointed leaves. The flowers come out early in the spring and are composed of twelve large bluish coloured petals. The seed-vessels are about three inches long, somewhat resembling a small Cucumber; from whence the inhabitants where it grows natural, call it the Cucumber-tree.

2. *MAGNOLIA glauca.* *Small Magnolia, or Swamp Sassafras.*

This grows naturally in low, moist, or swampy ground, often to the height of fifteen or twenty feet; covered with a whitish smooth bark, and dividing into several branches; furnished with entire, oblong, oval leaves, of a dark green on their upper surface, but whitish and a little hairy underneath. The flowers are produced at the ends of the branches, composed of six concave, white petals, of an agreeable smell; and are succeeded by oval, or somewhat

what conical seed-vessels, of an inch or more in length and three fourths of an inch in diameter; composed of many capsules, which open and discharge their seeds when ripe, hanging by slender white threads, of a red colour, and near the size of a small bean. The seeds and bark have been used with some success in the cure of Rheumatism, &c.

3. *MAGNOLIA grandiflora.* *Ever-green Laurel-leaved Tulip-Tree.*

This grows naturally in Florida and South Carolina, sometimes to the height of eighty feet or more, with a straight trunk of two feet or more in diameter; having a regular head. The leaves are ever-green, of a thick consistence, pretty large, oblong, pointed, and entire: of a lucid green on the upper side, and sometimes of a russet, or buff colour on the under. The flowers are produced at the ends of the branches; they are very large, and composed of eight or ten oblong white petals, narrowed towards the base, but broad, rounded, and a little waved at their extremities. They are succeeded by oblong, conical seed-vessels, disclosing their seeds after the manner of the other species. This is allowed to be one of the most beautiful ever-green trees yet known, but is impatient of cold.

4. *MAGNOLIA tripetala.* *The Umbrella Tree.*

This grows pretty frequent in Carolina, and some parts of Pennsylvania; usually to the height of sixteen or twenty feet, with a slender trunk, covered with a smooth bark, and dividing into several branches. The leaves are very large and entire, often from twelve to fifteen inches or more in length, and five or six in width, narrowing to a point at each extremity,
placed

placed at the ends of the branches in a circular manner, somewhat resembling an umbrella; from whence it obtained its name. The flowers are composed of ten, or eleven, large, oblong, white petals, the exterior ones hanging down; and are succeeded by oblong, conical seed-vessels, between three and four inches in length, and about one and a half in diameter, growing reddish and disclosing their seeds, when ripe, after the same manner of the others. There are said to be two other species in the southern states.

M E N I S P E R M U M.

M O O N S E E D.

Class 22. Order 10. Dioecia Decandria.

THE Flowers are Male and Female upon separate plants.

* The Male.

The *Empalement* is two leaved: the leaves are linear and short.

The *Corolla* has four *exterior* petals, which are ovate, spreading and equal. And eight *interior* lesser ones, ovate and concave.

The *Filaments* are sixteen (or more) cylindrical and rather longer than the corolla. The *Antheræ* are terminal, very short, and obtuse four lobed.

* The Female, on a different plant.

The *Empalement* as in the Male.

The *Corolla* as the Male.

The *Filaments* eight, like the male. The *Antheræ* are pellucid and barren.

The *Germen* are two, ovate, incurved, winking and pedicell'd.

The *Styles* are solitary, very short and recurved. The *Stigmas* are bifid and obtuse.

The *Seed-vessels* are two berries, roundish-kidney form and one cell'd.

The *Seeds* are solitary, large, and kidney form, or somewhat orbicular and compressed.

Obs. The Canadian has an *Empalement* and *Corolla* of six leaves, also six stamina and three styles.

The

The Species with us, are,

1. MENISPERMUM canadense. *Canadian Moonseed.*

This hath a thick, ligneous root, sending up many twining stalks, twisting themselves round the neighbouring trees for support, becoming woody, and rising to the height of ten or fifteen feet. These are furnished with large, smooth, roundish, angled leaves, having pretty long footstalks placed on their under sides, making a hollow, or appearance of a navel on the upper side. The flowers come out in loose bunches from the sides of the stalks; they are small, of an herbaceous colour, and composed of six oblong petals, six short stamina, and three styles arising from as many germen; which become three channelled berries, each containing one somewhat circular compressed seed.

2. MENISPERMUM carolinum. *Carolinian Moonseed.*

This is much smaller and weaker than the other, scarcely becoming shrubby. The leaves are smaller, entire, heart-shaped, and villous underneath.

3. MENISPERMUM virginicum. *Virginian Moonseed.*

This much resembles the Canadian kind, the leaves are target-form, heart-shaped and lobed.

MESPILUS.

M E S P I L U S.

The M E D L A R - T R E E.

Class 12. Order 4. Icosandria Pentagynia.

THE *Empalement* is one leaved, concave-spreading, five toothed, and permanent.

The *Corolla* has five petals, roundish, concave, and inserted in the calyx.

The *Filaments* are twenty, awl-shaped and inserted in the calyx.

The *Antheræ* are simple.

The *Germen* is beneath. The *Styles* are five, (often less) simple and erect. The *Stigmas* are headed.

The *Seed-vessel* is a berry, globose, umbilicated, and covered with the calyx, but somewhat perforated at the apex.

The *Seeds* are five, bony and gibbous.

The Species, with us, are,

* *Armed with Thorns*

1. MESPILUS coccinea. *Cockspur-Hawthorn.*

This rises generally to the height of ten or twelve feet, with a pretty strong stem, dividing into several branches, which are armed with strong thorns, bent downwards like a cock's spur. The leaves are somewhat oval, but spreading into angles, sawed on their edges, and smooth. The flowers come out at the extremities and sides of the branches in umbels; they are pretty large and are succeeded by fruit nearly as large as a small cherry and of a fine red colour when ripe.

There is a variety of this without thorns, with leaves deeper sawed on their edges, and not so deeply veined, otherwise of the same growth and appearance.

2. MESPILUS

2. MESPILUS Crus galli. *Pear leaved Thorn.*

This rises with a strong stem to the height of fifteen or twenty feet, sending off many long (and often nearly horizontal) branches, armed with long, sharp thorns. The leaves are of an oblong, oval shape, or often narrowed towards the base, sawed on their edges, smooth, and of a deep, shining green colour, and thick consistence. The flowers come out late, and are produced in small clusters at the ends of the branches. The fruit are of a middling size and of a dark or dirty reddish colour.

Obs. The flowers have frequently but one style.

3. MESPILUS cuneiformis. *Wedge leaved Mespilus.*

This grows often to the height of twenty feet or more, with a strong stem of five or six inches in diameter, covered with a dark rough bark, dividing into many branches, and armed with long sharp thorns. The leaves are smooth, wedge, or inverse-egg-shaped, and pointed; slightly and somewhat doubly serrated towards their extremities, of a shining green colour on their upper surface and veined with oblique parallel veins. The flowers are produced in small clusters at the ends of the branches and are succeeded by middle sized reddish fruit.

4. MESPILUS Azarolus major. *Great Azarole, or Hawthorn.*

This kind frequently rises to the height of twelve or fifteen feet, with a strong stem covered with a lightish rough bark, dividing into many branches, and armed with many long thorns. The leaves are
larger

larger than those of the other kinds, somewhat egg-shaped, but toothed or angled, sawed on their edges, and much veined. The flowers are produced in umbels at the extremity of the branches and are succeeded by large fruit, of a dark red colour.

5. *MESPILUS Azarolus minor.* *Smaller Azarole, or Hawthorn.*

This has much the appearance of the last, but is smaller in growth, leaves and fruit.

6. *MESPILUS Oxyacantha aurea.* *Yellow berryed Hawthorn.*

This rises to the height of six or eight feet, dividing into several branches and armed with sharp thorns. The leaves are somewhat egg-shaped, but acutely toothed and sawed on their edges. The flowers are produced as in the other kinds and are succeeded by middling sized fruit, of a greenish yellow colour when ripe.

7. *MESPILUS apiifolia.* *Virginian Parsley leaved Mespilus.*

This is generally of low growth, rising perhaps to the height of five or six feet, and armed with a few sharp thorns. The leaves are small, shining and much cut or divided on their edges. The fruit are small and red coloured.

*** *Without*

** *Without Thorns.*

8. *MESPILUS nivea.* *Early ripe, Esculent fruited Medlar, or wild Service.*

This rises frequently to the height of fifteen or twenty feet, dividing into several branches, which are without thorns, and covered with a smooth, whitish, spotted bark. The leaves are of an oblong oval; pointed, slightly and acutely serrated, hairy and whitish at their first appearance, but becoming smooth and of a dark green, especially upon their upper sides. The flowers are produced from the sides of the small branches in loose bunches or panicles, of a snowy white colour, and are succeeded by fruit near the size of a Goose-berry, which are soft, succulent, sweet tasted, and purplish coloured when ripe. The flowers of this come out before the leaves are expanded, perfectly white, and thick set upon the branches, making a fine appearance. The fruit is ripe in June, pretty large and of an agreeable taste. There is a variety of this of smaller growth, but of the same appearance.

9. *MESPILUS prunifolia.* *Plumb leaved Medlar.*

This grows naturally in moist places rising with slender stems to the height of six or eight feet, dividing into but few branches and without thorns. The leaves are inverse egg-shaped, pointed, slightly serrated, of a dark green on their upper surface, but lighter and downy underneath. The flowers are produced at the extremity of the branches in clusters, and are succeeded by small fruit of a dark purplish colour when ripe.

There

There is a variety of this, generally rising but to the height of two or three feet. The fruit are somewhat larger and of the same colour, but otherwise much resembling the other.

10. *MESPILUS canadensis.* *Dwarf red fruited Medlar.*

This rises to the height of four or five feet, with slender smooth stems, much resembling the last described, except in having fruit of a red colour when ripe. There is also a variety of this of smaller growth, which produces fruit of a beautiful red colour.

Obs. The characters of the *Cratægus* and *Mespilus* differ so immaterially that, I should suppose, they might be reduced to one Genus, with much greater propriety than the Beech and Chesnut. They are Genera in which much confusion prevails amongst Botanical writers, some classing most of the Species under the *Cratægus*, others the same Species under the *Mespilus*; neither is it easy to determine to which they, with most propriety, belong. I have frequently observed in some Species from one to three styles, in others from three to five, but not having observed any to be constant with two, agreeably to the character of the *Cratægus*, have ranged none under that Genus. We have, native of these states, several *Species* of *Mespilus*, and a great number of *Varieties*, which, until better discriminated and ascertained, can never be described with any degree of accuracy.

MITCHELLA.

MITCHELLA.

MITCHELLA.

Class 4. Order 1. Tetrandria Monogynia.

THE Flowers are twin, or two sitting upon the same bud; and each having an *Empalement*, four parted, erect, permanent and above.

A *Corolla* of one petal, funnel form. The *tube* cylindrical; the *border* four-parted, spreading and hairy within.

And four *Filaments*, thread-form, erect, and within the bosom of the corolla. With *Antheræ* oblong, and acute.

The *Germen* is twin, orbiculate, common to both, and beneath.

The *Styles* are one in each flower, thread-form and the length of the corolla. The *Stigmas* are four, oblong.

The *Seed-vessel* is a berry, two parted and globose.

The *Seeds* are four, compressed and callous.

There is but one Species of this Genus, viz.

MITCHELLA repens. *Creeping evergreen*
Mitchella.

This is a small plant, growing upon mossy, northern, shaded banks, with slender shrubby stalks, lying close to the ground, and putting out roots at the joints. The leaves are ever-green, of a thick consistence, obtusely egg-shaped, and entire; they are placed opposite and thick upon the branches, with short footstalks, and are often marked longitudinally with a whitish vein. The flowers are produced at the bosom of the leaves, they are double, or two arising from one bud, of a white colour, and are succeeded by small roundish red berries.

MORUS.

M O R U S.

The M U L B E R R Y - T R E E.

Class 21. Order 4. Monoecia Tetrandria.

* **T**HE Male Flowers are disposed in Katkins.The *Empalement* is four parted; the leaves ovate and concave.The *Corolla* none.The *Filaments* are four, awl-shaped, erect, longer than the calyx, and one within each leaf of the flower cup. The *Antheræ* are simple.* The *Female* Flowers are collected, either in the same, or a different plant from the male.The *Empalement* is four leaved: the leaves are roundish, obtuse, permanent; the two opposite exterior incumbent.The *Corolla* none.The *Germen* is heart shaped. The *Styles* are two, awl-shaped, long, reflexed, and rough. The *Stigmas* are simple.The *Seed-vessel* none. The *Empalements* becoming fleshy succulent berries, jointly forming an oblong rough fruit.The *Seeds*, one in each berry, ovate acute.*We have but one Species, native with us, viz.*MORUS rubra. *Large-leaved Virginian Mulberry Tree.*

This grows common in many parts of North-America, to the height of twenty or thirty feet, and with a trunk from twelve to eighteen inches or more in diameter; dividing into many branches, which are garnished with large, rough, heart-shaped, oblong, pointed leaves; sawed on their edges, and sometimes with others largely and deeply divided into two, three, or more pointed lobes. The leaves of male trees are generally largest. The fruit is large, of a dark purplish colour when ripe, very succulent

culent and of an agreeable taste. The timber affords very durable posts, for fencing, &c. As our Mulberry has been found, upon trial, to answer well for the purpose of raising silk worms, and growing spontaneously and plentifully in many parts of these states; it is presumed, many of our countrymen might profitably apply their attention to the culture of silk.

MYRICA.

CANDLEBERRY MYRTLE.

Class 22. Order 5. Dioecia Tetrandria.

THE Flowers are *Male* and *Female* on different plants.

* *The Male.*

The *Calyx* is a Katkin ovate-oblong, loose, imbricated on all sides, and consisting of *Scales*, which are one flowered, moon-shape, obtusely pointed, and concave.

The *Corolla* none.

The *Filaments* are four, (rarely six) thread-form, short, and erect. The *Antheræ* are large and twin, with two-cleft lobes.

* *The Female.*

The *Calyx* and *Corolla* as in the male.

The *Germen* is somewhat ovate. The *Styles* are two, thread-form and longer than the calyx. The *Stigmas* are simple.

The *Seed-vessel* is a berry, of one cell.

The *Seed* is one.

Obs. The *Gale* has four stamina: the Berry compressed at the apex, and three lobed: the *cerifera* has six stamina: the berry succulent and roundish.

The Species with us, are,

I. MYRICA *cerifera*. *Candleberry Myrtle.*

This grows naturally upon low boggy lands, rising with many strong shrubby stalks, to the height of six or eight feet; sending out several branches, which

which are furnished with stiff spear-shaped leaves, a little sawed towards their extremities, of a yellowish lucid green on their upper sides but paler underneath, having very short footstalks, and of a grateful odour when bruised. The katkins come out on different plants from the berries, and are about an inch long, standing erect. The female flowers come out on the sides of the branches in long bunches, and are succeeded by small roundish berries, covered with a mealy substance, and affording a kind of green wax, which is sometimes used in making candles.

2. MYRICA cerifera humilis. *Dwarf Candleberry Myrtle.*

This is a variety of the former kind, differing from it in being of a lower growth, the branches not so strong, and covered with a greyish bark. The leaves are also shorter and broader, and more sawed on their edges. The berries afford a wax like the others.

3. MYRICA Gale. *American Bog Gale.*

This also grows naturally in bogs and swamps, rising with shrubby stalks to the height of two or three feet, garnished with lance-shaped leaves, smooth and a little sawed towards their points. The berries are dry, compressed at the apex and three lobed.

N Y S S A.

The TUPELO-TREE.

Class 23. Order 1. Polygamia Dioecia.

THE Flowers are *Male* and *Hermaphrodite*, (in some Species *Male* and *Female*) upon different plants.

* The

* The Male.

The *Empalement* is five-parted and spreading, with a plane bottom.

The *Corolla* none.

The *Filaments* are ten, awl-shaped and shorter than the calyx.

The *Antheræ* are twin and the length of the filaments.

* The Hermaphrodite.

The *Empalement* as in the male, sitting upon the germen.

The *Corolla* none.

The *Filaments* are five, awl-shaped, and erect. The *Antheræ* are simple.

The *Germen* is ovate and beneath. The *Style* is awl-shaped, incurved, and longer than the stamina. The *Stigma* is acute.

The *Seed-vessel* is a drupe, ovate and one cell'd.

The *Seed* is a nut, oval, acute, hollowed with longitudinal furrows, angled, and irregular.

Obs. The *Nyssa sylvatica* is Male and Female on different trees.

The Species are,

1. *NYSSA aquatica.* *Virginian Water Tupelo-Tree.*

This grows naturally in wet swamps, or near large rivers, in Carolina and Florida; rising with a strong upright trunk to the height of eighty or an hundred feet, dividing into many branches towards the top. The leaves are pretty large, of an oval, spear-shaped form, generally entire, but sometimes somewhat toothed, and covered underneath with a whitish down: they are joined to long, slender footstalks, and affixed to the branches in somewhat of a verticillate order, presenting a beautiful varied foliage. The berries are near the size and shape of small olives, and are preserved in like manner by the French inhabitants upon the Mississippi, where it greatly abounds, and is called the Olive tree. The timber is white and soft when unseasoned, but light and

and compact when dry, which renders it very proper for making trays, bowls, &c.

2. NYSSA Ogeche. *The Ogeche Lime Tree.*

(Bartram's Catalogue.)

This is a tree of great singularity and beauty; growing naturally in water, in the southern states, and rising to the height of about thirty feet. The leaves are oblong, of a deep shining green on their upper sides, and lightly hoary underneath. The flowers are male and female upon different trees, and are produced upon divided, or many flowered footstalks. The fruit is nearly oval, of a deep red colour, of the size of a Damascene Plumb, and of an agreeable acid taste; from which it is called the Lime-tree. Perhaps this is the *multiflora* of Weston.

3. NYSSA sylvatica. *Upland Tupelo-Tree, or Sour Gum.*

This grows naturally in Pennsylvania and perhaps elsewhere, rising with a strong upright trunk to the height of thirty or forty feet, and sometimes of near two feet in diameter; sending off many horizontal, and often depending branches; garnished with oval, or rather inverse egg-shaped leaves, a little pointed, entire, of a dark green and shining upper surface, but lighter and a little hairy underneath: those of male trees are often narrower and sometimes lance-shaped. The flowers are produced upon pretty long common footstalks, arising from the base of the young shoots, and dividing irregularly into several parts, generally from six to ten; each supporting a small flower, having an empalement of six or seven linear, unequal leaves, and from six to eight awl-shaped

N

shaped spreading stamina, supporting short four lobed Antheræ. The female trees have fewer flowers produced upon much longer, simple, cylindrical footstalks, thickened at the extremity, and supporting generally three flowers, sitting close and having a small involucre. They are composed of five small oval leaves, and in the center an awl-shaped incurved style, arising from the oblong germen, which is beneath, and becomes an oval oblong berry, of a dark purplish colour when ripe. The timber of this tree is close grained and curled so as not to be split or parted; and therefore much used for hubs of wheels for waggons, carriages, &c.

O L E A.

The O L I V E - T R E E.

Class 2. Order 1. Diandria Monogynia.

THE *Empalement* is of one leaf, tubular, and small: the border four-toothed, erect and deciduous.

The *Corolla* is one petal'd, funnel-form. The tube cylindrical, the length of the empalement. The border four-parted and plain: the divisions semi-ovate.

The *Filaments* two, opposite, awl-shaped and short. The *Antheræ* erect.

The *Germen* is roundish. The *Style* simple, very short. The *Stigmas* two-cleft, thickened, the divisions end-nicked.

The *Seed-vessel* a drupe, somewhat ovate, smooth, and one cell'd.

The *Seed* ovate-oblong, and wrinkled,

The Species with us,

OLEA americana. *American Olive Tree.*

This grows naturally in Carolina and Florida, and is a beautiful ever-green tree. The leaves are nearly ovate, or somewhat oblong, perennial, of a shining, full

full green, on their upper surface, and of a solid consistence. The fruit or berries are nearly oval, of the size of a sparrow's egg, of a beautiful bluish purple, and covered with a nebula or gloom.

PHILADELPHUS.

SYRINGA, or MOCK-ORANGE.

Class 12. Order 1. Icosandria Monogynia.

THE *Empalement* is one leaved, four parted, sharp pointed, and permanent.

The *Corolla* has four petals, roundish, plane, large and spreading.

The *Filaments* are twenty, awl-shaped, and the length of the calyx. The *Antheræ* are erect and four furrowed.

The *Germen* is beneath. The *Style* is thread form and four-parted. The *Stigmas* are simple.

The *Seed-vessel* is a capsule, oval, sharp-pointed, part surrounded by the calyx, with four cells, and four valves.

The *Seeds* are numerous, oblong and small.

We have, with us, but one Species, viz.

PHILADELPHUS inodorus. *Carolinian Scentless Syringa.*

This is said to grow naturally in Carolina; rising with a shrubby stalk to the height of twelve or fifteen feet, sending out opposite branches, furnished with smooth, entire leaves, shaped like those of the Pear tree, but standing opposite upon pretty long footstalks. The flowers are pretty large and have large empalements of four acute-pointed leaves, and four white, oval, spreading petals, and a great number of stamina with yellow summits. This is impatient of much cold.

PINUS.

P I N U S.

The P I N E - T R E E.

Class 21. Order 9. Monoecia Polyandria.

* **T**HE *Male* Flowers are disposed in Racemi or bunches.
The *Calyx* none but the scales of the bud, gaping.

The *Corolla* none.

The *Filaments* are numerous and joined beneath in an erect column, divided at top. The *Antheræ* are erect.

* The *Female* Flowers are in the same plant.

The *Calyx* is a common, somewhat ovate cone, consisting of *Scales*, which are two flowered, oblong, imbricated, rigid, and permanent.

The *Corolla* none.

The *Germen* is very small. The *Style* is awl-shaped. The *Stigma* simple.

The *Seed-vessel* none but the scales of the cone.

The *Seed* is a nut, increased with a membranaceous wing, which is larger than the seed, but smaller than the scale of the cone, oblong, straight on one side and gibbous on the other.

The Species, with us, are,

1. PINUS echinata. *Three leaved prickly-coned Bastard Pine.*

This grows naturally in Virginia. The leaves are long and narrow, sometimes three, at other times but two in each sheath. The cones are long and slender, their scales terminating in sharp points.

2. PINUS palustris. *Longest three leaved Marsh Pine.*

This grows naturally in South Carolina, and is of a middling growth. The leaves are produced by threes in a sheath and are often ten or twelve inches in

in length. The cones are long and large, opening and dropping their seeds in the fall. It is accounted equal to any for yielding tar, &c.

3. PINUS rigida. *Common three leaved Virginian Pine.*

This grows common in many places throughout these states, rising often to the height of sixty or seventy feet, with a large erect trunk, dividing into branches towards the top, and furnished with pretty long leaves growing by threes in a sheath. The cones are often produced in clusters round the branches, they are about three inches long and have rigid scales. There are whole Forests of many hundred acres of these trees in some back parts of the country, of which great quantities of Boards are sawed and floated down some of our long rivers.

4. PINUS Strobilus. *New-England, or White Pine.*

This is allowed to out top in growth most of our other trees, rising with a large erect trunk, to the height of an hundred feet or more, covered with a smooth bark and sending off many long branches. The leaves are long and slender, growing by fives in a sheath, and set thick on the branches. The cones are often six or seven inches in length, and generally besmeared with turpentine, with which these trees much abound. The cones generally open about the first of September, soon after which the seeds drop out. This also grows in great plenty towards the heads of some of our rivers, from whence great quantities are rafted down, affording excellent masts, yards, spars, &c. &c. for ship building.

5. PINUS

5. PINUS Tæda. *Virginian Swamp, or Frank-
incence Pine.*

This grows to a pretty large size, the leaves are very long and narrow and are produced by threes in a sheath. The cones are pretty long and large. This is useful for boards, and for producing turpentine and tar, as are the other kinds.

6. PINUS virginiana. *Two-leaved Virginian,
or Jersey Pine.*

This is generally of but low growth, but divided into many branches. The leaves are broader and shorter than the other kinds, and of a deeper green colour; they are produced by twos in each sheath. The cones are small, each scale terminating with a prickly point. This is called, in some places, Spruce Pine.

P I N U S - A B I E S.

The F I R - T R E E.

1. PINUS-ABIES Balsamea. *Balm of Gilead
Fir-Tree.*

This tree grows to the height of thirty or forty feet, sending off many branches, which are thick set chiefly upon two sides, with stiff linear leaves, resembling those of the Yew. The surface of the trunk is almost covered with small bladders, or risings in the cuticle of the bark, which are filled with a clear balsam or turpentine. The cones are pretty large, and fall to pieces in the autumn.

2. PINUS-

2. PINUS-ABIES canadensis. *Newfoundland Spruce.*

There are said to be three varieties of this, distinguished by the colour of their cones, into white, red and black; some of which, sometimes become pretty large trees. The leaves are stiff and linear, and slightly channelled on both sides, smaller than those of the Balm of Gilead, and set equally upon all sides of the branches. The trees make a very good appearance, and of these the famous Spruce-beer is brewed.

3. PINUS-ABIES americana. *Hemlock Spruce Fir-Tree.*

This rises up with but a slender trunk, sometimes to a great height, and is generally thick set with somewhat horizontal branches. The leaves are shaped much like those of the Yew and are ranged upon two sides of the branches, so appearing flat, like those of the European Silver Firs, but are of a pale green on both sides. The cones are very small, loose, and of an oval oblong form. The bark is said to be good for tanning leather; and with it, our natives dye their splints for baskets of a red colour.

P I N U S - L A R I X.

The L A R C H - T R E E.

1. PINUS-LARIX rubra. *Red American Larch-Tree.*

This shoots up to a considerable height with a slender erect trunk, sending off many slender branches. The

The leaves are pretty long, linear and soft, coming out in fasciculi, or small bundles spreading like a painter's brush, and are set pretty thick round the branches. They are of a light green colour and deciduous. The cones are of a fine red colour at their first appearance; they are small, perhaps three-fourths of an inch long, and half an inch thick, the scales smooth, opening early in the fall and dropping their seeds, which are very small and winged.

2. PINUS-LARIX alba. *White American Larch-Tree.*

This a variety of the other, differing very little, except in the cones, being of a greenish white colour.

3. PINUS-LARIX nigra. *Black American Larch-Tree.*

This is also a variety differing in having dark coloured cones.

P L A T A N U S.

The P L A N E - T R E E.

Class 21. Order 8. Monoecia Polyandria.

THE Flowers are *Male* and *Female* upon the same plant.

* The *Male* Flowers are disposed in a globose katkin.

The *Calyx* consists of some very small segments.

The *Corolla* is scarce manifest.

The *Filaments* are oblong, thicker above, and coloured. The *Antheræ* are four cornered, moving round the filaments to the inferior side.

* The *Female* Flowers are disposed in a globe.

The *Calyx* consists of many small scales.

The *Corolla* of many petals, concave, oblong and clubbed.

The

The *Germen* are many, disposed in a globe and ending in awl-shaped *Styles*, with recurved *Stigmas*.

The *Seed-vessel* none. But a globose receptacle.

The *Seeds* are oblong, angular and clubbed, crowned by the permanent style, and with a capillary pappus adhering at the base.

Obs. I am in doubt with regard to the petals.

We have, with us, but one Species, viz.

PLATANUS occidentalis. *American Plane-Tree,*
or Large Button Wood.

This grows common by creeks and river sides in many parts of America. It is of quick growth, and often becomes a large tree of sixty or seventy feet in height and above three feet in diameter, sending off but few long, diverging branches, which together with the upper part of the trunk, are generally covered with a smoothish bark, annually, or often renewed, and falling off in thin plates or scales. The leaves are broad, and cut into angles, or lobed; having several acute indentures on their borders, of a light green on their upper side, but paler, and a little wooly underneath; with long footstalks, and placed alternately. The flowers are produced in round pendulous balls, of near an inch in diameter, upon very long footstalks. This is sometimes sawed into boards, and has been much used of late by our card-makers, for card-boards or backs.

P O P U L U S.

The P O P L A R - T R E E.

Class 22. Order 7. Dioecia Octandria.

THE Flowers are *Male* and *Female* on different Plants.

* The *Male*.

O

The

The *Calyx* is a common katkin, oblong, loosely imbricated, and cylindrical; composed of *Scales* which are one flowered, oblong, and plane, with the margin torn.

The *Corolla* none, but

A *Nectarium* of one leaf, top shaped and tubulous beneath, but oblique and terminating in an oval border above.

The *Filaments* are eight, very short. The *Antheræ* are four-cornered and large.

* The *Female*.

The *Katkin*, *Scales*, and *Nectaria*, are like the Male.

The *Germen* is ovate-sharp pointed. The *Style* is scarce manifest. The *Stigma* is four cleft.

The *Seed-vessels* are ovate capsules, two cell'd and two valv'd: the valves reflexed.

The *Seeds* are numerous and ovate, with a volatile capillary pappus.

The Species, with us, are,

1. *POPULUS deltoide.* *White Poplar, or Cotton Tree of Carolina.*

(Bartram's Catalogue.)

This becomes a tall tree, with a large erect trunk, covered with a white, smoothish bark, resembling that of the Aspen tree. The leaves are large, generally nearly triangular, toothed or indented with sharp and deep serratures, of a shining full green on their upper surface, but somewhat lighter or hoary underneath; standing upon long slender footstalks, and generally restless or in motion. The timber is white, firm, and elastic, principally used for fence rails. It grows naturally upon rich low lands, on the banks of large rivers in Carolina and Florida.

2. *POPULUS*

2. *POPULUS heterophylla.* *Virginian Poplar-Tree.*

This becomes a pretty large tree, the branches of which are nerved, appearing as if quadrangular. The leaves are large and variously shaped, some roundish, others heart-form, slightly sawed on their edges and downy at their first appearance.

3. *POPULUS nigra.* *Black Poplar.*

This is not of very large growth, but covered with a darkish rough bark. The leaves are somewhat triangular, pretty long pointed, slightly and obtusely sawed on their edges, standing upon pretty long footstalks, smooth and of a bright green on their upper surface, but lighter and a little downy underneath.

4. *POPULUS tremula.* *American Aspen-Tree.*

This grows frequently to the height of about thirty feet, covered with a smooth whitish bark. The leaves are small, smooth on both sides, of a dark green colour above, but lighter underneath; roundish, and a little pointed, or forming nearly an equilateral spherical triangle; slightly crenated, a little waved on their edges, and trimmed with a very narrow hairy border. Their footstalks are pretty long, roundish at the base, but compressed on their sides towards the base of the leaves. The katkins are large appearing early in the spring.

5. *POPULUS balsamifera.* *Balsam, or Tacamahac-Tree.*

This is a tree of but middling growth, covered with a light brown bark. The leaves are large, somewhat

somewhat heart-shaped, lightly toothed, or crenated on their edges, of a dark green on their upper surface but lighter underneath. The buds abound with a glutinous resin, which is the *tacamahacca* of the shops.

6. *POPULUS balsamifera lanceolata.* *Lance-leaved Balsam Tree.*

This is a variety of the last kind, of a small and very slow growth. The leaves are spear-shape, of a bright green above, but whitish and variegated with brownish veins beneath, with a few, scarce observable, serratures on their edges, and joined to short, channelled, and often somewhat reddish footstalks.

P O T E N T I L L A.

SHRUB CINQUEFOIL.

Class 12. Order 5. Icosandria Polygynia.

THE *Empalement* is of one leaf, planish, and half five cleft: the alternate divisions are less and reflexed.

The *Corolla* has five petals, roundish, spreading, and inserted by claws in the calyx.

The *Filaments* are twenty, awl-shaped, shorter than the corolla, and inserted in the calyx. The *Antheræ* are elongate-moon-shaped.

The *Germen* are numerous, very small and collected in a little head. The *Styles* are thread-form, the length of the stamina, and inserted in the sides of the germen. The *Stigmas* are obtuse.

The *Seed-vessel* none, but a common receptacle, which is roundish, juiceless, very small, permanent, covered with seeds and included in the calyx.

The *Seeds* are numerous and sharp pointed.

We have but one Species, viz.

POTEN-

POTENTILLA fruticosa americana. *American shrubby Cinquefoil.*

This is a small shrub, seldom rising above two feet high, and spreading into many branches. The leaves are small and thick set upon the branches, they are winged, and composed, generally, of five small, oblong hairy lobes, reflexed on their edges and standing together. The flowers are produced pretty thick on the branches, of a yellow colour, and are succeeded by small heads of pointed seeds.

PRINOS.

The WINTER-BERRY.

Class 6. Order 1. Hexandria Monogynia.

THE *Empalement* is one leaved, plane, half-six-cleft, very small, and permanent.

The *Corolla* has one petal, wheel-shaped. The *tube* none. The *border* is six parted and plane: the divisions ovate.

The *Filaments* are six, awl-shaped, erect and shorter than the corolla. The *Antheræ* are oblong and obtuse.

The *Germen* is ovate, ending in a *Style* shorter than the stamina, with an obtuse *Stigma*.

The *Seed-vessel* is a roundish berry, with six cells; and far larger than the calyx.

The *Seeds* are solitary, bony, obtuse, convex on one side and angled on the other.

Obs. Sometimes a sixth part of the number is excluded.

There are two Species of this Shrub, viz.

1. PRINOS glaber. *Evergreen Winter-Berry.*

This grows in several parts of North America, rising up with slender shrubby stalks to the height of six or eight feet, dividing into branches, which are garnished

garnished with small, evergreen, oblong, smooth leaves, of a thick consistence, with a few slight serratures towards their points, and placed alternate, upon shortish footstalks. The flowers are produced from the bosom of the leaves upon short footstalks; and are succeeded by small roundish berries, of a black colour when ripe.

2. *PRINOS verticillatus.* *Virginian Winter-Berry.*

This grows naturally in moist places, by streams of water; generally sending up several slender stalks to the height of eight or ten feet, dividing into a few branches towards the top. The leaves are lance-shaped, sharp pointed, and acutely sawed on their edges; having short slender footstalks, and placed alternately. The flowers come out at the bosom of the leaves in small Corymbi or Clusters; of an herbaceous colour. They are succeeded by roundish berries of a red colour when ripe, and remaining long on the branches, almost surrounding them in places and somewhat resembling a whorl.

Note, The inner bark of this shrub is very good to make poultices of for ripening tumors.

P R U N U S.

The P L U M B - T R E E.

Class 12. Order 1. Icosandria Monogynia.

THE *Empalement* is one leaved, bell-shaped, five cleft, and deciduous; the divisions are obtuse and concave.

The *Corolla* has five petals, roundish, concave, large, spreading, and inserted by claws in the calyx.

The *Filaments* are from twenty to thirty, awl-shaped, near the length of the corolla, and inserted in the calyx. The *Antheræ* are twin and short.

The

The *Germen* is roundish. The *Style* is thread-form and the length of the *stamina*. The *Stigma* is orbiculate.

The *Seed-vessel* is a roundish drupe.

The *Seed* is a nut, roundish and compressed.

The Species, with us, are,

1. *PRUNUS americana. Large Yellow Sweet Plumb.*

This generally rises to the height of twelve or fifteen feet, spreading into many stiff branches. The leaves are oblong, oval, acute pointed, sharply sawed on their edges and much veined. The flowers generally come out very thick round the branches, often upon thick short spurs; and are succeeded by large oval fruit, with a sweet succulent pulp. We have a great variety of these, growing naturally in a good, moist soil, with reddish and yellowish fruit, but differing much in size, taste, and consistence.

2. *PRUNUS angustifolia. Chicasaw Plumb.*

This is scarcely of so large a growth as the former, but rising with a stiff shrubby stalk, dividing into many branches, which are garnished with smooth lance-shaped leaves, much smaller and narrower than the first kind; a little waved on their edges, marked with very fine, slight, coloured ferratures, and of an equal, shining green colour, on both sides. The blossoms generally come out very thick, and are succeeded by oval, or often somewhat egg-shaped fruit, with a very thin skin, and soft sweet pulp. There are varieties of this with yellow and crimson coloured fruit. These being natives of the southern states, are somewhat impatient of much cold.

3. *PRUNUS*

3. PRUNUS mississippi. *Crimson Plumb.*

This grows naturally upon the Mississippi, and is of larger size than most of the other kinds. The fruit are crimson coloured, and somewhat acid.

4. PRUNUS maritima. *Sea side Plumb.*

This grows naturally towards the sea coast, rising to the height of eight or ten feet, often leaning, and spreading into many branches. The leaves are oblong, rather smaller and not so pointed as those of the common plumb; smooth and of a shining green on the upper side, but something lighter underneath, and slightly sawed on the edges. This is generally well filled with flowers, a few of which are succeeded by small, roundish fruit.

5. PRUNUS declinata. *Dwarf Plumb.*

This is of a small dwarfish growth, seldom rising above four or five feet high, but frequently bearing fruit at the height of two or three; which is small, and almost black when ripe.

To this Genus also belongs

C E R A S U S.

The C H E R R Y - T R E E.

Of which our Species are,

1. PRUNUS-CERASUS virginiana. *Virginian Bird-Cherry-Tree.*

This grows naturally in a rich moist soil, often to the height of forty feet or more, with a trunk of
eighteen

eighteen or twenty inches in diameter, generally retaining its thickness a considerable height, and branching out towards the top. The leaves are lance-shaped, or long, narrow, pointed, and sawed on their edges. The flowers are produced in bunches, generally pretty thick set on the branches; they are of a white colour, and are succeeded by small fruit, of a purplish colour when ripe, and of a disagreeable, bitter taste, but greedily devoured by the birds.

The timber is of a reddish streaked colour, capable of receiving a fine polish; and is frequently sawed into boards, and used by joiners, cabinet-makers, &c. for many purposes.

2. *PRUNUS-CERASUS canadensis.* *Canadian, or Dwarf Bird-Cherry-Tree.*

This is a small kind, growing to the height of six or eight feet, and dividing into branches, which are furnished with broader and shorter leaves, somewhat resembling those of the Apple, or Crab-tree, but smaller. The flowers are produced in a racemus, or bunch, composed of more footstalks than the Virginian kind; and are succeeded by fruit of near the same colour and size, not of so bitter a taste, but greatly corrugating the mouth and throat, so as to obtain the name of Choak-Cherry.

3. *PRUNUS-CERASUS montana.* *Mountain Bird-Cherry-Tree.*

This grows naturally upon the mountains in the back parts of Pennsylvania; rising up with a slender stem to the height of twelve or fifteen feet, and dividing into a few very slender branches, furnished with leaves resembling the first, or Virginian kind.

The fruit is likewise produced in the same manner, but is smaller, of a red colour, and an extremely acid taste.

And also to the Genus Prunus, belongs,

LAURO-CERASUS.

The LAUREL-TREE.

Of which we have but one Species, viz.

PRUNUS-LAURO-CERASUS ferratifolia. *Carolinian
Evergreen Bay-tree.*

This is a beautiful evergreen shrub, but of small growth; spreading with lateral branches, on every side and covered with a brown bark. The leaves are spear-shaped, above two inches long and three quarters of an inch or more in breadth, with a few sharp ferratures on their edges, standing alternately on very short footstalks, of a thick consistence, and shining green colour, continuing their verdure all the year. The flowers are generally very numerous, perfectly white, and are succeeded by roundish fruit of the size of a middling cherry, of a black colour when ripe. This is a native of South Carolina, and other southern States.

P T E L E A.

P T E L E A.

Class 4. Order 1. Tetrandria Monogynia.

THE *Empalement* is five-parted, acute, and small.

The *Corolla* has four petals, ovate-lanced, plane, spreading, larger than the calyx, and coriaceous.

The

The *Filaments* are four, awl-shaped. The *Antheræ* are roundish. The *Germen* is orbiculate and compressed. The *Style* is short.

The *Stigmas* are two, a little obtuse.

The *Seed-vessel* is a roundish, perpendicular membrane, in the center two cell'd.

The *Seed* is one, obtuse, and lessened at the base.

Obs. The *Petals* and *stamina*, also the divisions of the calyx, have often one added to their number.

We have, with us, but one Species, viz.

PTELEA trifoliata. *Carolinian Shrub-Trefoil.*

This rises with an upright woody stem, to the height of ten or twelve feet, dividing into many branches, covered with a smooth greyish bark. The leaves are trifoliate, or composed of three oval, spear-shaped lobes, of a bright green on their upper side, but paler underneath, and inserted together at the end of a pretty long footstalk. The flowers terminate the branches in a kind of umbel, or large branching heads, of a whitish herbaceous colour; and are succeeded by roundish, flat, bordered capsules, somewhat resembling those of the Elm, each containing two seeds.

PYROLA.

WINTER-GREEN.

Class 10. Order 1. Decandria Monogynia.

THE *Empalement* is five-parted, small, and permanent.

The *Corolla* is composed of five petals, which are roundish, concave, and spreading.

The *Filaments* are ten, awl-shaped, shorter than the corolla.

The *Antheræ* are nodding, large, and two-horned upward.

The *Pistillum* has a roundish, angular *Germen*; a filiform, permanent *Style*, longer than the *stamina*; and a thickish *Stigma*.

The

The *Pericarpium*, or *Seed-vessel*, is a roundish, depressed, pentagonal *Capsule*, with five cells, gaping at the angles.

The *Seeds* are numerous and chaffy.

Obs. The *Stamina* and *style* differ sometimes in situation.

The Species, with us, are,

1. *PYROLA maculata.* *Spotted Pyrola.*

This is a small plant, seldom rising above four or five inches high, with slender ligneous stalks. The leaves are ever-green, oblong and pointed, of a thick consistence, with a few sharp serratures on their edges; smooth and of a dark green on their upper sides, but marked with a broad, branching, longitudinal vein or streak, of a whitish or paler colour; and somewhat reddish underneath. There are generally three or four of these placed at the top of the stem somewhat horizontally, and sometimes smaller ones beneath, set by threes. The flowers are likewise produced at the top upon a pretty long, (nodding at first, but afterwards erect) divided footstalk, often sustaining two or three white flowers, which are succeeded by roundish, depressed capsules, filled with small seeds.

2. *PYROLA rotundifolia.* *Round leaved Pyrola.*

This is of smaller growth than the former, having about three or four roundish leaves, rising from the root, with pretty long three sided footstalks, channelled above. These often become pretty large and a little waved on their edges, they are of a light green, and scarcely perennial. The flowers are produced upon a radical triangular footstalk, of four or five inches in length, in form of a racemus or bunch, supporting five or six white flowers, which are succeeded by small, round, depressed capsules.

3. *PYROLA*

3. PYROLA umbellata. *Umbellated Pyrola.*

This grows commonly to the height of five or six inches, generally set pretty thick with leaves, which are wedge-shaped or narrowest towards the base, smooth, of a shining green, and sharply sawed on their edges. The flowers terminate the stalks on a pretty long divided footstalk, in a kind of little umbel, which is nodding at first but becomes erect, supporting five or six round, pentagonal, depressed capsules, filled with small seeds.

A decoction or infusion of this, has been used with considerable success as a substitute for the Peruvian bark. The roots are said to give ease in the tooth ach. This kind is called by the Indians *Phip-sesawa*.

P Y R U S.

The P E A R - T R E E.

Class 12. Order 4. Icosandria Pentagynia.

THE *Empalement* is of one leaf, concave, half five-cleft, and permanent; the segments spreading.

The *Corolla* has five roundish, concave, large petals, inserted in the empalement.

The *Filaments* are twenty, awl-shaped, shorter than the corolla, and inserted in the empalement. The *Antheræ* simple.

The *Germen* is beneath. The *Styles* five, thread-form, the length of the stamina. The *Stigmas* simple.

The *Seed-vessel* a pome, roundish, umbilicated and fleshy, with five membranaceous cells.

The *Seeds* a few, oblong, obtuse, sharpened at the base, convex on one side and plane on the other.

To this Genus belongs

MALUS.

MALUS.

The APPLE-TREE.

*Of which we have one Species, viz.*PYRUS-MALUS coronaria. *Virginian sweet-scented Crab-Tree.*

This often grows to the height of twelve or fifteen feet, dividing into many stiff branches, set pretty thick with short stiff spurs. The leaves are somewhat like those of the Apple-tree, but often toothed, or largely and irregularly sawed on their edges. The flowers generally come out thick upon the branches, upon pretty long dividing footstalks; they are pretty large, of a beautiful blush colour, and fragrant odour at their first appearance. The fruit is small, hard, roundish, umbilicated, and extremely acid. It is frequently used for conserves, &c. There is said to be a variety of this in Carolina with evergreen leaves, though I have never seen it.

QUERCUS.

The OAK-TREE.

Class 21, Order 8. Monoecia Polyandria.

*THE Male Flowers are disposed in a loose katkin.

The *Empalement* is of one leaf, four or five-parted; the divisions are acute and often bifid.They have no *Corolla*.The *Filaments* are several, very short. The *Antheræ* large and double.*The *Female* are in close buds, on the same plant with the Male.The *Perianthium* is of one leaf, coriaceous, hemispherical, rough, and entire, scarce manifest in the flower.

There

There is no *Corolla*.

The *Germen* is egg-shaped and small. The *Style* simple, five-cleft and longer than the empalement. The *Stigmas* are simple and permanent.

There is no *Seed-vessel*, but an oval, columnar, smooth nut, shaven at the base and affixed in the short calyx.

The Species and Varieties with us, are many, which, I think, may be divided in the following manner, into

* *Quercus alba. White Oak.*

1. *QUERCUS alba. Common American White Oak.*

This grows very common, and with age arrives to the size of a large tree of seventy or eighty feet in height, and of three, four, five, or more feet in diameter; dividing into many large branches, and covered with a whitish scaly bark. The leaves are narrowed towards the base, but spreading and deeply sinuated obliquely, towards the ends; the sinuses obtuse, the angles, or productions unequal in length, entire and obtuse. They are of a glaucous, or light green underneath and have very short footstalks. The acorns are middling sized, sitting in small shallow cups. There are some varieties of this, differing in the hardness and toughness of the timber, and somewhat in their acorns or fruit. It affords a hard, tough, useful and valuable timber, which is hewed into beams, &c. for frame buildings; sawed into plank, &c. for ship building; and applied to various other useful purposes. Our swine are often wholly fattened upon the several kinds of acorns, but for these and Chesnut Oak they seek most diligently.

2. *QUERCUS*

2. *QUERCUS alba minor.* *Barren White Oak.*

This grows generally upon poor, barren, or waste land, rising perhaps to the height of thirty or forty feet, covered with scaly greyish bark. The leaves are somewhat rough, but of a shining green above, somewhat paler underneath; they are sinuated deeply, most obtusely, and irregularly; the lobes or productions (if I may be allowed the expression) are obtuse, often somewhat angular, and very irregular. The acorns are small and striped. The timber is accounted very durable for posts, to set in the earth; otherwise not much esteemed unless for fuel.

3. *QUERCUS alba palustris.* *Swamp White Oak.*

This becomes a pretty large spreading tree, of two or three feet in diameter and of proportionable height. The bark is often rougher or more furrowed than the other kinds, and greyish coloured. The leaves are somewhat wedge-shaped or narrowed towards the base, and toothed on their edges and extremities. The acorns are larger and rounder than those of the common White Oak, and have larger and thicker cups, supported often by pairs upon a long, strong footstalk.

* * *Quercus nigra.* *Black Oak.*4. *QUERCUS nigra.* *Common Pennsylvanian Black Oak.*

This grows to the height of sixty or seventy feet, and to three or four feet in diameter, with large spreading branches. The leaves are large, spreading, and somewhat woolly; their footstalks longer than those of the White Oak. They are irregularly

ly and sometimes pretty deeply sinuated, the angles or productions unequal, generally obtuse, yet with their veins extending in a bristly point. The acorns are roundish and not large, sitting in thick scaly cups. There is, I think, a variety of this of much smaller growth, with larger leaves and differing somewhat in the fruit. Our common Black Oak is used much (where Cedar is scarce) for making shingles, and also for rails, &c.

5. *QUERCUS nigra digitata.* *Finger-leaved Black Oak.*

This grows naturally in low lands, rising to the height of thirty or forty feet, with a trunk of considerable thickness, covered with a rough blackish bark. The leaves are sinuated, or divided towards their extremities into two or three pretty long, somewhat finger-shaped lobes, of unequal length, with others shorter, sometimes at the sides; all of which end in a bristly point. The acorns are small, but the cups pretty large.

6. *QUERCUS nigra trifida.* *Maryland Black Oak.*

This grows naturally in Maryland, and other low lands, with a trunk of eighteen inches or two feet in diameter, and thirty or forty feet in height. The leaves are wedge-shaped, or narrowed towards the base, and three-pointed, with bristly terminations. The acorns and cups resemble the last mentioned.

7. *QUERCUS nigra integrifolia.* *Entire-leaved Black Oak.*

This grows about the size of the other low-land Black Oak, and is of the same appearance, except the

the leaves being somewhat inverse egg-shaped, and often a little notched or indented on each side towards the extremity.

8. *QUERCUS nigra pumila.* *Dwarf Black Oak.*

This grows naturally upon poor barren ridges, rising to the height of five or six feet, with a crooked, branching stem. The leaves are about three pointed, much resembling those of the Maryland Black Oak. The acorns are small, and stand in small shallow cups. This, I believe, is of little use or beauty.

*** *Quercus rubra.* *Red Oak.*

9. *QUERCUS rubra maxima.* *Largest Red Oak.*

This often becomes a large tree, of the height of seventy or eighty feet and of four, five, or sometimes six feet in diameter; retaining its thickness to a considerable height, and without lateral branches, but spreading at the top. The leaves are large, obtusely and but lightly sinuated, the angles acute, each often terminating with several acute, bristly points. The acorns are large and somewhat conical, fitting in broad shallow cups. The timber is used for staves, shingles, rails, &c.

10. *QUERCUS rubra ramosissima.* *Water Red Oak.*

This grows most naturally by creek sides, or in low wet places, rising to the height of a pretty large tree; generally thick set with slender lateral branches, and covered with somewhat smooth, greyish coloured bark. The leaves are small, obtusely and deeply

ly sinuated, pretty uniformly, almost to the midrib; the angles or lobes are narrow, acute, and unequal, each terminating with several bristly points. The acorns and cups are small. This is generally known by the name of Water or Low Land Spanish Oak. The butts of these trees are often used for rimming of carriage wheels, &c.

11. *QUERCUS rubra montana.* *Upland Red Oak.*

This grows naturally upon higher and poorer land than the others, often attaining to fifty or sixty feet in height. The bark is somewhat rough and lightish coloured. The leaves are deeply and obtusely sinuated, somewhat regularly; the angles somewhat bitrid, or ending in several acute, bristly points; their footstalks are pretty long. The acorns and cups are middling sized. The timber is generally worm eaten, or rotten at heart, therefore of little esteem. It is likewise commonly known by the name of Spanish Oak; and, I think, has some varieties differing in the size of their fruit and leaves.

12. *QUERCUS rubra nana.* *Dwarf Barren Oak.*

This grows naturally upon dry barren ridges, and is found from five to ten feet high, generally growing very crooked. The leaves are smaller, but somewhat resemble those last described. The acorns and cups are small, the acorns red at the base and striped when taken first from their cups. It is called barren from its place of growth, but is generally almost covered with fruit, sitting very close on all sides of the branches.

**** *Quercus*

**** Quercus Phellos. *Willow-leaved Oak.*

13. QUERCUS Phellos angustifolia. *Narrow Willow-leaved Oak.*

This grows naturally in low lands, and to the height of fifty or sixty feet, with a trunk of considerable size. The leaves are entire, smooth, oblong, and lance-shaped, of about three inches in length and half an inch in breadth, and have very short footstalks. The acorns and cups are small. The timber is sound and good.

14. QUERCUS Phellos latifolia. *Broad Willow-leaved Oak.*

This tree very much resembles the other in every respect, except in having leaves of about double the width; and broader but perhaps shorter cups and acorns.

15. QUERCUS Phellos sempervirens. *Ever-green Willow-leaved Oak.*

This grows naturally in Carolina, becoming a pretty large tree, of the height of forty feet or more. The leaves are perennial, entire, somewhat oval, spear-shaped, of a dark green colour and thick consistence. The acorns are small, oblong, sitting in short cups, and containing a very sweet kernel. The timber is hard, tough and coarse grained.

***** Quercus

***** Quercus Prinus. *Chestnut-leaved Oak.*

16. QUERCUS Prinus. *Chestnut-leaved Oak.*

This grows naturally upon a light gravelly soil, frequently to forty feet or more in height, and above two feet in diameter; covered with a furrowed, lightish coloured bark. The leaves are somewhat oval and uniformly crenated on their edges, or rather sometimes obtusely toothed. The acorns are smooth and large, greenish coloured and sitting in shallow spreading cups. The timber somewhat approaches towards that of Chestnut in appearance, but affords very good fuel, rails, &c.

17. QUERCUS Prinus humilis. *Dwarf Chestnut or Chinquepin Oak.*

This generally rises with several shrubby, spreading stalks, to the height of two or three feet. The leaves are somewhat wedge-shaped and toothed, or slightly and obliquely sinuated. The acorns and cups pretty much resemble those of the large kind, but are considerably smaller.

It may not be improper here to make some remarks with respect to cutting, or felling of timber. Long experience, I think, hath sufficiently ascertained, that timber cut down in the spring of the year, when full of sap, and the leaves fully expanded; and also in the third or last quarter of the moon's age; is much more durable than when cut at any other time. Timber when full of sap and vigour, in all probability, contains also more oily particles, which, in proportion as they abound, are known to add to its durability. With regard to the influence of the moon, it may probably be accounted a superstitious

stitious or whimsical fancy, but that it materially affects timber is a fact well known to those who strip, or peel bark for the use of tanners; and when accounted for in one case, may probably throw some light upon the other. But further, it is also a fact well known, that timber, whose bark has been sufficiently separated and peeled round at the but, in order for deading, as it is termed; if done in the decrease of the moon, retains its greenness often a considerable time; but if in the increase, withers in a much shorter time. From hence, I think, we may conclude, that the sap or juice of trees, has a kind of monthly circulation, or revolution; ascending in the moon's decrease, but descending in the increase. However, be this as it may, the falling of timber in the different phasis of the moon, is confidently asserted, from experience, to materially affect its durability.

R H O D O D E N D R U M.

DWARF ROSE-BAY.

Class 10. Order 1. Decandria Monogynia.

THE *Empalement* is of one leaf, five parted and permanent.
 The *Corolla* of one leaf, wheel-funnelled: the border spreading: the divisions rounded.
 The *Filaments* ten, thread-form, almost the length of the corolla, and declined. The *Antheræ* oval.
 The *Germen* five cornered, retuse. The *Style* thread-form, the length of the corolla. The *Stigma* obtuse.
 The *Seed-vessel* ovate, angled, five cell'd.
 The *Seeds* numerous and small.

We have, with us, but one Species, viz.

RHODO-

RHODODENDRUM maximum. *Pennsylvanian
Mountain Laurel.*

This grows to the height of about six or eight feet, often with several stems from the same root. The leaves are oblong and entire, generally about four or five inches in length and one and a half or near two in breadth: of a thick consistence, and shining dark green on the upper side but lighter underneath, continuing their verdure all the year. The flowers are pretty large and of a pale rose colour, studded with spots of a deeper red, having their tubes a little bent. They are produced at the extremity of the former year's shoots, in roundish clusters, making a beautiful appearance. This is much and deservedly esteemed as a very beautiful, evergreen, flowering shrub.

R H U S.

S U M A C H.

Class 5. Order 3. Pentandria Trigynia.

THE *Empalement* is five-parted, beneath, erect, and permanent.

The *Corolla* of five petals, ovate and a little spreading.

The *Filaments* are five, very short. The *Antheræ* small, shorter than the corolla.

The *Germen* above, roundish, and the size of the corolla. The *Styles* scarce any. The *Stigmas* three, hearted, small.

The *Seed-vessel* a berry, roundish, and of one cell.

The *Seed* one, roundish, bony.

Obs. The *Toxicodendron* has smooth, striated berries: the kernel compressed and furrowed.

The *Vernix* is male and female upon different plants.

The *Glabrum* (and perhaps some others) is female and hermaphrodite on different plants.

The

The Species with us, are,

1. RHUS Copallinum. *Lentiscus-leaved Sumach.*

This grows to the height of six, eight, or sometimes ten feet, dividing into slender branches, and covered with speckled bark. The leaves are winged, and composed of four or five pair of narrow, entire lobes, terminated by an odd one; joined to a common footstalk; with decurrent, leafy expansions between each pair of lobes. The flowers are produced in loose, compound panicles, of an herbaceous colour, and are succeeded by reddish seeds, sprinkled with a greyish pounce. This grows naturally in a flaty, gravelly soil. The berries are very acid. There are some varieties of this, much resembling it but of smaller growth, and with redder berries.

2. RHUS glabrum. *Smooth Pennsylvanian Sumach.*

This grows naturally in several of the northern States, rising to the height of six or eight feet, dividing in a few thick, pithy and somewhat angled branches; covered with a smooth bark. The leaves are large and winged, composed of eight, nine, or ten pair of lobes, and an odd one; oblong, pointed and sawed on their edges; of a pretty deep green on their upper sides, but much lighter underneath and changing reddish in autumn. The flowers are hermaphrodite and female on separate plants, and are produced in large, erect, compounded panicles, or thyrsi, terminating the branches; of an herbaceous colour; the hermaphrodite of which are largest and barren, but the female are succeeded by seeds with a red meally covering, of an acid taste.

RHUS

RHUS glabrum carolinense. *Carolinian Scarlet-flowering Sumach.*

This is a variety of the last described, but differing in having scarlet flowers.

RHUS glabrum canadense. *Canadian Red-flowering Sumach.*

This is also a variety of the same, growing naturally in Canada, with red flowers.

3. *RHUS typhinum.* *Stag's-horn Sumach.*

This grows naturally in Virginia and Pennsylvania, often rising to the height of twelve or fifteen feet, with a trunk of six or eight inches in diameter; dividing at the top into several branches; which, when young, are covered with a soft, velvet-like down, resembling that of a young stag's horn, both in colour and texture. The leaves are composed of six or seven pair of oblong lobes, terminated by an odd one, ending in acute points, and together with the midrib, a little hairy underneath. The flowers are produced in a close, erect panicle or thyrsus, terminating the branches; they are of an herbaceous colour and are succeeded by seeds enclosed in a purple, woolly, succulent covering; making a fine appearance in the autumn.

4. *RHUS canadense.* *Canadian trifoliate Sumach.*

This grows naturally in Canada, and perhaps the northern parts of Pennsylvania. The stems are slender, rising to the height of six or eight feet, and covered with a brown bark. The leaves are composed

posed of three lobes, somewhat egg-shaped and joined to a common footstalk. The flowers are male and female on different plants.

To this Genus is also added,

TOXICODENDRON.

The POISON-TREE.

Of which we have,

1. RHUS-TOXICODENDRON Vernix. *Varnish-Tree, or Poison Ash.*

This rises with a pretty strong, erect stem, to the height of twelve or fourteen feet; dividing towards the top into several branches. The leaves are winged, and composed of three or four pair of lobes, terminated by an odd one; which are for the most part oval, spear-shaped, smooth, and of a lucid green on their upper side, but paler and a little hairy underneath; their footstalks changing of a purple colour in autumn. The male and female flowers are produced upon different trees, and are disposed in loose panicles, coming out from the bosom of the leaves; of an herbaceous colour. The female are succeeded by small, roundish seeds, of a lightish colour when ripe. This is allowed to be the same with the true Varnish-tree of Japan; where it is collected in great quantities, by making incisions in the trees and placing vessels underneath to receive the milky juice, which hardens and becomes the true varnish; much used in various kinds of curious workmanship. This, in all probability, might be collected here equal in quality with that of Japan and to considerable advantage. This tree ought to be

be handled with caution, as it is very poisonous to many people.

2. **RHUS-TOXICODENDRON** *toxicodendrum*.

Poison-Oak.

This has a low, shrubby stalk, seldom rising above three or four feet. The leaves are trifoliate, with pretty long footstalks, the lobes are entire, smooth and somewhat heart-shaped. The flowers come out from the sides of the stalks, in loose panicles of an herbaceous colour; small, and not always hermaphrodite. They are succeeded by roundish, channelled, smooth berries, of a yellowish grey colour when ripe.

3. **RHUS-TOXICODENDRON** *radicans*. *Poison-Vine.*

This rises with many shrubby climbing stems, attaching themselves to every neighbouring support; and often rising to the height of twenty or thirty feet, with a stem of two or three inches in diameter; sending off many branches. The leaves are trifoliate, and have pretty long footstalks: the lobes are somewhat oval and pointed, often somewhat toothed. The flowers are produced in short panicles from the sides of the branches, and are succeeded by roundish berries, of a brownish colour when ripe.

R I B E S.

The **CURRENT-BUSH.**

Class 5. Order 1. **Pentandria Monogynia.**

THE *Empalement* is of one leaf, part five-cleft and bellied: the divisions oblong, concave, coloured, reflexed and permanent. The

The *Corolla* is of five petals, small, obtuse and erect, adjoined to the margin of the empalement.

The *Filaments* are five, awl-shaped, erect and inserted in the calyx. The *Antheræ* are incumbent, compressed, and gaping at the margin.

The *Germen* roundish and beneath. The *Style* bifid. The *Stigmas* obtuse.

The *Seed-vessel* a berry, globous, umbilicated and of one cell, with two receptacles, lateral, opposite and longitudinal.

The *Seeds* many, roundish, and somewhat compressed.

The Species, with us, are,

* *Ribesia inermia.* *Currant-Trees.*

1. *RIBES nigrum pennsylvanicum.* *Pennsylvanian Black Currants.*

This grows to the height of the common cultivated Currant, but the stalks are generally more slender and covered with a darkish, smooth bark. The leaves have the same resemblance but are smaller. The flowers grow in loose bunches, and are succeeded by oblong, black fruit when ripe.

** *Grossulariæ aculeatæ.* *Goose-berries.*

2. *RIBES oxycanthoides.* *Mountain Wild Goose-berry.*

These grow to the size of the common Goose berry, but have smaller stems and not branching so much; but near the earth are often prickly on all sides. The leaves are smaller but have the same appearance. The fruit is also much smaller but of an agreeable taste when ripe. This either by a little culture becomes smooth, otherwise we have a different kind, not more prickly than the common.

3. *RIBES*

3. *RIBES cynosbati.* *Prickly fruited Wild Goose-berry.*

This grows naturally in Canada and the upper parts of Pennsylvania; and much resembles the other, except in having its fruit covered on all sides with softish prickles.

R O B I N I A.

ROBINIA, or FALSE-ACACIA.

Class 17. Order 3. Diadelphia Decandria.

THE *Empalement* is of one leaf, small, bell-shaped, and four-toothed: the three inferior slender; the superior fourth of double the width, and slightly emarginated; all equal in length.

The *Corolla* Butterfly-shaped.

The *Standard* roundish, large, spreading and obtuse.

The *Wings* oblong, ovate, free: with very short, obtuse appendages.

The *Keel* almost semi-orbiculate, compressed, obtuse, and the length of the wings.

The *Stamina* are *Filaments* in two sets, or bodies; (one simple, the other nine-cleft) rising above. The *Antheræ* roundish.

The *Germen* cylindrical, oblong. The *Style* thread-form, bent upward. The *Stigma* villous before at the apex of the style.

The *Seed-vessel* large, compressed, gibbous, and long.

The *Seeds* few, kidney-form.

The Species with us, are,

1. *ROBINIA Pseud-Acacia.* *White flowering Robinia, or Locust-Tree.*

This grows naturally in several of these States; rising to the height of forty or fifty feet, with a trunk of eighteen or twenty inches in diameter, dividing

viding into many branches which are armed with short, strong spines. The bark is darkish coloured and rough. The leaves are winged and generally composed of eight or ten pair of small, oval lobes, terminated by an odd one; entire, of a bright green and sitting close to the midrib. The flowers are produced from the sides of the branches in long pendulous bunches, each having a separate footstalk; they are white, of a butterfly shape and sweet smelling; and are succeeded by compressed pods, of three or four inches in length and half an inch in width, containing several hard, kidney-shaped seeds. The timber is very durable, and used for posts to set in the earth, and other purposes; therefore, the propagation of it might be well worthy of attention. Its natural place of growth is in a rich moist soil.

2. ROBINIA rosea. *Rose coloured Robinia.*

This spreads much from its running roots, sending up weak branching stalks, to the height of six or eight feet, but often flowering much smaller. The whole plant, with the footstalks of the leaves and flowers, are closely armed with soft, purplish spines. The leaves are winged and composed of five or six pair of oval, concave lobes, terminated by an odd one, with their midribs protruding in short bristly points. The flowers are larger than those of the other kind and of a Peach blossom colour, with their stamina distinctly in two bodies; whereas those of the other are frequently all joined at the base. This is a beautiful flowering shrub, sometimes flowering twice or more in a season, but seldom producing seeds. There are several other varieties differing somewhat in their pods or colour of their flowers.

R O S A.

R O S A.

The R O S E - B U S H.

Class 12. Order 5. Icofandria Polygynia.

THE *Empalement* is of one leaf. The *tube* bellied; narrowed at the neck; the *border* spreading, five parted and globous: the divisions long, narrow and pointed.

The *Corolla* is composed of five petals, heart-shaped, the length of the empalement, and inserted in its neck.

The *Stamina* are very many, capillary, very short, and inserted in the neck of the empalement. The *Stigmas* obtuse.

The *Seed-vessel* is fleshy, top-shaped, coloured, and of one cell.

The *Seeds* numerous, oblong, hairy, and joined within on all sides of the Seed-vessel.

The Species, native with us, are,

1. R O S A carolinensis. *Wild Virginian Rose.*

This rises with several stalks to the height of five or six feet, somewhat prickly, as are also the footstalks of the leaves and flowers. The leaves are composed of four or five pair of lobes terminated with an odd one, which are somewhat spear-shaped and sawed on their edges. The flowers are single, of a red colour and late coming.

2. R O S A palustris. *Swamp Pennsylvanian Rose.*

This grows generally in swamps; rising to the height of four or five feet, with erect, and very prickly stems, branching out at top in a regular head. The leaves are composed of three pair of lobes, terminated by an odd one, of an oblong, oval shape

shape and slightly serrated, joined to a common footstalk with a few spines underneath. The flowers are single and of a damask colour; the hips or seed-vessels are of a dark red, roundish, depressed, prickly or bristly, and very clammy to the touch.

3. *Rosa humilis.* *Dwarf Pennsylvanian Rose.*

This rises with several slender stems to the height of two or three feet; covered with a brownish green bark, and armed with a few sharp spines. The leaves are composed of three or four pair of lobes, and an odd one, of an oblong egg-shape and sharply sawed on their edges. The leaves of the flower cup have often linear, leafy elongations. The flowers are single and of a pale reddish colour.

4. *Rosa pennsylvanica plena.* *Double Pennsylvanian Rose.*

This very much resembles the last described in growth and appearance, except in having a double flower.

R U B U S.

The RASPBERRY BUSH and BRAMBLE.

Class 12. Order 5. Icosandria Polygynia.

THE *Empalement* is of one leaf, five-parted: the divisions oblong, spreading and permanent.

The *Corolla* is of five petals, roundish, somewhat spreading, of the length of the *Empalement* and inserted into it.

The *Filaments* are numerous, shorter than the petals, and inserted in the *Empalement*. The *Antheræ* are roundish and compressed.

The *Germen* are numerous. The *Styles* small, capillary, and arising from the sides of the germen. The *Stigmas* simple and permanent. The

The *Seed-vessel* a compound berry: the *acini* roundish, collected in a convex head, concave beneath; and each with one cell.

The *Seeds* solitary and oblong; their receptacle conical.

The Species, with us, are;

1. RUBUS fruticosus. *Common Blackberry Bush.*

This rises generally (with several stalks from the same root) to the height of four or five feet, but sometimes to eight or ten: which are somewhat angled, and pretty thick set with sharp prickles. The leaves are composed of three lobes, the side ones of which are often divided; mostly egg-shaped, pointed, acutely and unequally sawed on their edges, a little hairy underneath, and joined to a pretty long prickly footstalk, the middle one extending some little distance from the others. This is generally well furnished with flowers, which often stand upon paniced, or divided footstalks, and are succeeded by black fruit when ripe.

2. RUBUS hispidus. *American Dewberry Bush.*

This is much smaller than the other, having several slender weak stems, which often trail on the ground to a considerable distance. The leaves very much resemble those of the Blackberry, but are generally smaller. The fruit is also smaller, rounder and blacker; and supported upon long, simple, prickly footstalks.

3. RUBUS

3. RUBUS canadensis. *Smooth stalked Canadian Bramble.*

This is said to grow in Canada with purplish stalks without prickles. The leaves are fingered; composed of ten, five, and three lobes, which are very slender, lance-shaped, and sharply serrated.

4. RUBUS occidentalis. *American Raspberry.*

This rises with a round prickly stalk, of seven or eight feet in length, which often descends again to the earth in a semi-circular manner, sometimes taking root. The stalks are covered with a thin bluish scum or mist, and furnished with trifoliate leaves. The lobes are somewhat heart, or egg-shaped; cut and sawed on their edges, whitish and downy underneath, the lateral ones sometimes divided, the common footstalk pretty long, and the middle or terminal lobe a little subtended. The flowers are produced at the extremity of the branches in a kind of racemus or bunch, and are succeeded by small fruit of a reddish black colour when ripe; the *acini* of which are joined, parting entire from the conical receptacle.

5. RUBUS odoratus. *Virginian Rose-flowering Raspberry.*

This rises with upright woody stalks, without prickles, to the height of three or four feet, covered with a brown scaly bark. The leaves are single, large, palmated or divided into five or more pointed lobes, sharply sawed on their edges, a little hairy, and joined to pretty long, hairy footstalks. The flowers are produced in a kind of panicle at the extremity of the branches, of a curdled reddish colour; resembling

resembling a small single Rose, both in their petals, and divisions of their flower cups which are villous, and terminate in leafy elongations. This grows naturally on rocky mountains in Pennsylvania and Virginia, and makes an agreeable appearance by a long succession of rose-shaped flowers.

S A L I X.

The W I L L O W - T R E E.

Class 22. Order 2. Dioecia Diandria.

* **THE Male Flowers** are disposed in a common, oblong, imbricated katkin, with an involucre formed of the bud. The *Scales* are one-flowered, oblong, plain, and spreading.

It hath no petals; but a very small, cylindrical, truncated, honey-bearing Gland, or Nectarium, in the center of the flower.

The *Filaments* are two, straight, and thread form. The *Antheræ* are twin, and four-cell'd.

* The *Female* have a katkin and scales as the male.

The *Petals* none.

The *Germe*n ovate, and lessened into a *Style* scarce distinct, somewhat longer than the *Scales* of the flower-cup. The *Stigmas* two, bifid and erect.

The *Seed-vessel* a capsule, ovate-awl-shaped, of one cell and two valves: the valves revolute.

The *Seeds* are numerous, ovate, very small, and crowned with a simple hairy Pappus.

The Species, native with us, are,

* *With smooth serrated leaves.*

1. SALIX nigra. Rough American Willow.

This rises often with a leaning or crooked trunk to the height of about twenty feet, covered with a dark

dark coloured, rough bark. The leaves are smooth and of equal colour on both sides; narrow, lance-shaped, and very slightly serrated. The katkins are long and slender.

*** With serrated villose leaves.*

2. *SALIX sericea.* *Ozier, or Silky leaved Willow.*

This rises generally to the height of eight or ten feet, with many shrubby stalks, covered with pretty smooth, dark, greenish bark. The leaves are shorter and somewhat broader than the other kind, lance-shaped, silky underneath, and very slightly serrated on the edges.

**** With entire villose leaves.*

3. *SALIX humilis.* *Dwarf Willow.*

This seldom rises above three or four feet, with greenish, somewhat downy stalks. The leaves are larger than the other kinds, entire, oblong, somewhat oval, and glaucous or whitish underneath. There are some varieties of larger growth, belonging either to this or the last mentioned kind.

S A M B U C U S.

The E L D E R - T R E E.

Class 5. Order 3. Pentandria Trigynia.

THE *Empalement* is of one leaf, above, very small, five-part-ed, and permanent.

The *Corolla* is of one petal, concave wheel-shaped, part five-cleft, obtuse, the divisions reflexed.

The

The *Filaments* five, awl-shaped, the length of the corolla. The *Antheræ* roundish.

The *Germen* beneath, ovate, obtuse. The *Style* none, but in its place a bellied *Gland*. The *Stigmas* three, obtuse.

The *Seed-vessel* a roundish berry of one cell.

The *Seeds* three, angular on one side and convex on the other.

The Species, with us, are,

1. *SAMBUCUS nigra*. *American Black-berried Elder.*

This rises generally to the height of six or eight feet, with a stem sometimes of two or three inches in diameter. The leaves are generally composed of three pair of lobes and an odd one, which are somewhat oval, pointed, sharply sawed on their edges, a little hairy on both sides, light coloured underneath and joined to pretty large, channelled footstalks, placed opposite. The flowers are produced at the extremities of the same year's shoots in a kind of umbel, of five principal parts, again divided: they are white and are succeeded by berries which are blackish when ripe. An infusion of the inner bark is purgative. From the berries may be prepared a spirit, a wine, and an oil, which promote urine, perspiration and sweat.

2. *SAMBUCUS canadensis*. *Canadian Red-berried Elder.*

This grows naturally upon Mountain sides, or moist, rich, shaded places, in the back parts of Pennsylvania. It has much the appearance of the other kind, but produces red berries, which are ripe the latter end of June, at the time the other is in flower.

SMILAX.

S M I L A X.

ROUGH BINDWEED, or GREEN BRIAR.

Class 22. Order 6. Dioecia Hexandria.

* **T**HE Male have *Empalements* of six leaves, of a spreading bell-shape; the leaves are oblong, joined at the base, spreading and reflexed at the apex.

The *Corolla* none.

The *Filaments* are six, simple. The *Antheræ* oblong.

* The Female have *Empalements* as the male, deciduous.

The *Corolla* none.

The *Germen* ovate. The *Styles* three, very small. The *Stigmas* oblong, reflexed, downy.

The *Seed-vessel* a globose berry, of three cells.

The *Seeds* two, globose.

The Species, with us, are,

* *With a square prickly stem.*

1. **S M I L A X** *Sarsaparilla. Ivy leaved rough Bindweed, or Sarsaparilla.*

This grows naturally in Virginia and to the southward, rising up with prickly, angular stalks. The leaves are without prickles, oval shaped, pointed, and three nerved.

2. **S M I L A X** *virginiana. Lanceolate-leaved rough Bindweed.*

The stalks of this are slender, angular and prickly. The leaves are without spines, spear-shaped and pointed; their bases not eared.

** *With*

**** With a round prickly stem.**

3. *SMILAX rotundifolia.* *Canadian round leaved Smilax.*

The stalks of this are round and winding, with a few straight spines. The leaves are heart-shaped, without spines, five-nerved, having short footstalks with two slender clasps.

4. *SMILAX laurifolia.* *Bay leaved rough Bindweed.*

This hath a round stalk, armed with prickles or spines. The leaves are of an oval lance-shape, without spines, and of thicker consistence than those of the other species. The flowers are small and whitish, the berries black when ripe.

5. *SMILAX tamnoides.* *Bryony leaved rough Bindweed.*

The stems of this are armed with prickles and round; climbing upon the neighbouring trees for support. The leaves are without spines, of an oblong heart-shape and five nerved. The berries are black.

6. *SMILAX caduca.* *Three-nerved-leaved rough Bindweed.*

This rises with round, naked, winding stalks, armed with many straight, black pointed spines and covered with a green bark. The leaves are ovate, pointed, three nerved and annual. The berries black.

***** With**

*** *With a square smooth stem.*

7. SMILAX bona nox. *Carolinian prickly leaved Smilax.*

The stalks of this are angular and without spines. The leaves are broad, and ciliated or set upon the margin with spines. There is also a variety with narrow rough leaves, eared at the base and angular.

**** *With a smooth round stem.*

8. SMILAX lanceolata. *Red berried Virginian Smilax.*

The stalks of this are smooth and round. The leaves are without spines and lance-shaped. The berries red coloured.

9. SMILAX Pseudo China. *Bastard China.*

This hath smooth round stalks. The leaves are without spines, those on the stalks heart-shaped, but on the branches lance-shaped. The berries are black and supported on very long footstalks.

S O R B U S.

The SERVICE TREE, QUICKBEAM, or MOUNTAIN ASH.

Class 12. Order 3. Icosandria Trigynia.

THE *Empalement* is of one leaf, concave-spreading, five-parted and permanent.

The *Corolla* is of five petals, roundish, concave and inserted in the *Empalement*.

The *Filaments* twenty, awl-shaped, and inserted in the *Empalement*. The *Antheræ* roundish.

The

The *Germen* beneath. The *Styles* three, thread-form, and erect. The *Stigmas* headed.

The *Seed-vessel* a berry, soft, globose, and umbilicated.

The *Seeds* three, somewhat oblong, distinct, and cartilaginous.

The Species, with us, but one, viz.

SORBUS americana. *American Service Tree.*

This grows naturally upon the mountains towards Canada; rising to the height of about fifteen or eighteen feet, with an erect stem dividing into several branches. The leaves are winged, composed of eight or nine pair of lobes, terminated by an odd one; which are narrow and sawed on their edges. The flowers are produced at the extremity of the branches in form of an umbel, and are succeeded by roundish berries of a red colour when ripe.

S P I R Æ A.

S P I R Æ A.

Class 12. Order 4. Icosandria Pentagynia.

THE *Empalement* is of one leaf, half five-cleft, and plane at the base: the divisions acute; permanent.

The *Corolla* of five petals, oblong-rounded, and inserted in the calyx.

The *Filaments* above twenty, thread-form, shorter than the corolla, and inserted in the calyx. The *Antheræ* roundish.

The *Germen* five or more. The *Styles* as many, thread-form, and the length of the *Stamina*. The *Stigmas* headed.

The *Seed-vessels* capsules, oblong, sharp-pointed, compressed and two valved.

The *Seeds* few, sharp-pointed and small.

Obs. *S. opulifolia* has three *Styles*.

The

The Species, with us, are,

1. SPIRÆA hypericifolia. *Canadian Spiræa, or Hypericum-frutex.*

This rises generally to the height of four or five feet, dividing into many slender branches, and covered with a dark brown bark. The leaves are oblong, entire, and smooth, resembling those of St. John's-wort, and placed opposite. The flowers are yellow, and disposed in small umbels, sitting close to the stalks, each having a long, slender footstalk; and are succeeded by oblong, pointed capsules, filled with small seeds. This makes a very good appearance when in flower.

2. SPIRÆA opulifolia. *Guelder Rose-leaved Spiræa, or Nine-Bark.*

This rises with many shrubby branching stalks, covered with a brown scaly bark, to the height of five or six feet. The leaves are somewhat three parted, the two side divisions or lobes small, obtuse and near the base; the middle one large and pointed; they are also slightly crenated and sawed on their edges. The flowers are produced at the extremity of the branches, in form of a corymbus or cluster: they are white with some spots of pale red, and are succeeded by clusters of greenish, inflated capsules.

SPIRÆA caroliniana. *Carolinian Guelder Rose-leaved Spiræa.*

This is a variety of the former, and resembles it much in growth and appearance.

3. SPIRÆA

3. SPIRÆA tomentosa. *Scarlet flowered Philadelphian Spiræa.*

This grows naturally in Pennsylvania; rising with slender, branching stalks to the height of three or four feet, having a purple bark, covered with a grey meally down. The leaves are small, spear-shaped, unequally sawed on their edges, of a bright green on their upper sides, but downy and veined underneath. The flowers terminate the branches in form of a racemus or bunch; they are small and of a beautiful red colour.

4. SPIRÆA tomentosa alba. *White flowered Philadelphian Spiræa.*

This is a variety of the former; rising with slender stalks to the height of four or five feet. The leaves are small and of thin texture, of an oblong oval, or somewhat wedge shape, slightly and sharply sawed on their edges, and a little downy on both sides. The flowers are produced in manner of the former, of a beautiful white, making a pretty appearance. This is called Indian Pipe Shank, from the pithy stems being used by the natives for that purpose.

STAPHYLÆA.

BLADDER-NUT-TREE.

Class 5. Order 3. Pentandria Trigynia.

THE *Empalement* is five-parted, concave, roundish, coloured, and almost the size of the corolla.

The *Corolla* is five petal'd, oblong, erect, and like the calyx.

The *Nectarium* concave and pitcher-shape in the bottom of the flower.

The

The *Stamina* are five, oblong, erect, and the length of the calyx. The *Antheræ* simple.

The *Germen* thickish, three-parted. The *Styles* three, simple and a little longer than the *stamina*. The *Stigmas* obtuse and contiguous.

The *Seed-vessel* three *Capsules*, inflated, flaccid, joined by longitudinal futures; and with pointed tops gaping inwardly.

The *Seeds* are few, hard, and roundish, joined to the interior futures.

The Species, with us, but one, viz.

STAPHYLÆA trifoliata. *Three-leaved Bladder-nut-Tree.*

This rises generally to the height of eight or ten feet, dividing into many branches, placed opposite. The bark of the stem and old branches are of a greyish colour, but of the young shoots of a light green. The leaves are trifoliate, the middle lobe having a footstalk; the lobes are oval, lance-shaped, slightly and sharply sawed on their edges, and joined to pretty long common footstalks, placed opposite. The flowers are produced upon pretty long, paniced footstalks; they are white and are succeeded by pretty large, three-sided bladders or capsules, enclosing a few roundish, hard seeds.

STEWARTIA.

STEWARTIA.

Class 16. Order 5. Monadelphia Polyandria.

THE *Empalement* is of one leaf, five parted and spreading; the divisions ovate, concave, and permanent.

The *Corolla* consists of five petals, inverse-ovate, spreading, equal and large.

The

The *Filaments* are numerous, filiform, shorter than the corolla, joined in a cylinder below, and to the petals at the base.

The *Antheræ* are roundish and incumbent.

The *Germen* roundish and hairy. The *Style* filiform, the length of the *Stamina*. The *Stigma* five cleft.

The *Seed-vessel* a juiceless pome, five lobed, and five cell'd.

The *Seeds* are solitary, ovate and compressed.

The Species but one, viz.

STEWARTIA Malacodendron. *Virginian Stewartia.*

This grows naturally in Virginia; rising with strong stems to the height of ten or twelve feet, and covered with a brown bark. The leaves are oval and somewhat spear-shaped, most slightly serrated and villose underneath. The flowers are large and white, produced singly, and fitting close upon the small branches. The seed-vessels are dry, somewhat conical, ligneous capsules, having five sharp angles, and five cells, each containing one oblong smooth seed. This makes a beautiful appearance when well filled with its large white flowers.

STYRAX.

The STORAX-TREE.

Class II. Order I. Dodecandria Monogynia.

THE *Empalement* is of one leaf, cylindrical, erect, short and five-toothed.

The *Corolla* is of one petal, funnel-form. The *tube* is short, cylindrical, and the length of the calyx. The *border* five-parted, large and spreading: the divisions lance-shaped and obtuse.

The *Filaments* are erect, placed in a circle, more than twelve, scarce joined at the base, awl-shaped and inserted in the corolla. The *Antheræ* are oblong and straight.

The

The *Germen* beneath. The *Style* simple, the length of the *stamina*. The *Stigma* lopped.

The *Seed-vessel* a *drupe*, roundish and of one cell.

The *Seeds* two nuts, roundish, pointed, convex on one side and plane on the other.

The Species, with us, but one, viz.

STYRAX americana. *Carolinian Storax-Tree.*

This grows naturally in Carolina; rising with a pretty strong stem to the height of ten or twelve feet, covered with a smooth brownish bark, and dividing into many slender branches. The leaves are pretty large, oval shaped, a little pointed, scarce observably toothed, of a deep green, and a little downy on the upper surface, but lighter and much more downy underneath; having short footstalks, which together with the young shoots, are also woolly or downy. The flowers are produced upon the small branches, in a kind of racemus or bunch; supporting a few scattered flowers, which are white, pendulous, and have each ten stamina and somewhat the fragrance of an Orange flower. They are succeeded by roundish seed-vessels, each containing two roundish, pointed nuts or seeds.

T A X U S.

The Y E W - T R E E.

Class 22. Order 12. Dioecia Monadelphia.

*THE Male Flowers have no *Empalements*, but a bud of four leaves somewhat like one.

They have no *Corolla*.

The *Filaments* are numerous, joined beneath in a column, and longer than the bud. The *Antheræ* are depressed, obtuse at the margin, eight-cleft, gaping on every side at the base (and

(and having cast their farina) plane, targetted, and remarkable for their eight-cleft margin.

* The *Female Empalements* are as in the Male.

They have no *Corolla*.

The *Germen* is ovate and pointed. The *Style* none. The *Stigma* obtuse.

The *Seed-vessel* is formed of the lengthened receptacle, into a globose, succulent, coloured covering or berry, open at top. The *Seed* one, oblong-ovate, the apex protruding out of the berry.

We have, native but one Species, viz.

TAXUS canadensis. *Canadian Yew-Tree.*

This shrub is of low growth, but divided into many branches spreading on every side. The leaves are narrow, stiff, linear, pointed, and evergreen; thick set upon all sides of the branches, but inclining upwards. The flowers come out thick upon the sides of the branches and are succeeded by oval, red, succulent berries, open at top, and enclosing an oval brown seed. This is a beautiful evergreen shrub, capable of being formed into any shape.

T H U Y A.

ARBOR VITÆ, or TREE OF LIFE.

Class 21. Order 9. Monoecia Monodelphia.

* **T**HE *Male* Flowers are disposed in oval katkins, and are placed upon a common footstalk in triple opposition; each one having for its base

A *Scale* somewhat ovate, concave and obtuse.

No *Corolla*, but

Four *Filaments* in each flower, scarce manifest, and as many *Antheræ*, adjoined to the base of the scaly cup.

* The *Female* flowers are upon the same plant, in somewhat ovate Cones, composed of opposite Scales, which are two flowered, ovate and convex.

No

No *Corolla*.

The *Germen* is very small. The *Style* awl-shaped. The *Stigma* simple.

The *Seed-vessel* a Cone, oblong-ovate, obtuse, and gaping longitudinally: the *Scales* are oblong, nearly equal, convex outwardly and obtuse.

The *Seeds* are oblong, begirt longitudinally with a membranaceous, end-bitten wing.

The Species, with us, but one, viz.

THUYA occidentalis. *American Arbor Vitæ.*

This grows naturally in Canada, and other northern parts of America; rising to the height of thirty or forty feet, with a pretty strong stem, sending off many branches, which are produced irregularly and stand almost horizontally. The bark of young trees is of a dark brown and smooth, but afterward becomes cracked and less smooth. The young branches are flat, and covered with very small leaves, lying over each other like scales of fish. The cones are small and loose, containing but few oblong, winged seeds.

THUYA variegata. *Striped leaved Arbor Vitæ.*

This is a variety of the first, differing in having striped or variegated leaves.

THUYA odorata. *American Sweet-scented Arbor Vitæ.*

This is also a variety of the same, agreeing with it in growth and appearance; but differing in its leaves or small branches, being of an agreeable, or sweet scent, when bruised.

TILIA.

T I L I A.

The LIME, or LINDEN-TREE.

Class 13. Order 6. Polyandria Hexagynia.

THE *Empalement* is five parted, concave, coloured, almost the length of the corolla, and deciduous.

The *Corolla* is of five petals, oblong, obtuse and notched at the end.

The *Filaments* are many, (thirty and upwards) awl-shaped, and the length of the corolla. The *Antheræ* are simple.

The *Germen* roundish. The *Style* filiform, the length of the stamina. The *Stigma* obtusely five-sided.

The *Seed-vessel* a *Capsule*, coriaceous, globose, five-cell'd, five-valved, and gaping at the base.

The *Seed* solitary and roundish.

Obs. The *Capsule* appears to have but one cell and one seed, the other four being abortive.

The American *Tilia* has five Scales placed round the bud and joined to the claws of the corolla.

The Species with us, are,

1. *TILIA americana.* American black Lime, or Linden-Tree.

This often becomes a tree of a large size, covered with a dark brown bark, and dividing into many branches. The leaves are large, heart-shaped, pointed, and sawed on their edges, of a deep green on their upper sides, but paler and a little hairy underneath; and standing on long footstalks. The flowers are produced upon the small branches, and are remarkable for having an oblong *bractea* or floral leaf upon each footstalk; they are of an herbaceous colour, having narrow petals furnished with nectaries at the base. The capsules are round, a little hairy

hairy and about the size of a small pea, having each one roundish seed.

2. *TILIA caroliniana*. *Carolinian oblique-leaved Lime-Tree*.

This is of smaller growth than the former, rising commonly to the height of about forty feet, with a trunk of eighteen inches or more in diameter: covered with a lightish and somewhat furrowed bark, and sending off many branches. The leaves are smaller and smoother than those of the other kind, somewhat heart-shaped, ending in long points, unequal at the base, or larger on one side of the midrib than the other, and slightly sawed on their edges. The bunches of flowers stand upon long slender footstalks, furnished with floral leaves. The flowers are small, and have narrow, pointed petals, furnished with nectaries or scales at the base; they diffuse a fragrant odour, and are continually haunted by bees during their continuance. An infusion of the flowers of Lime-tree has been used with success in an Epilepsy. The timber is too soft for any strong purposes, therefore, chiefly used by turners, carvers, &c. also, by architects in framing models of buildings, &c.

T I L L A N D S I A.

T I L L A N D S I A.

Class 6. Order 1. Hexandria Monogynia.

THE *Empalement* is of one leaf, three-parted, oblong and permanent: the divisions oblong-lanced, and sharp-pointed.

The *Corolla* tubulous and of one petal. The *tube* long and belled. The *border* three-cleft, obtuse, erect and small.

The

The *Filaments* are six, as long as the tube of the corolla. The *Antheræ* acute, and incumbent in the neck of the corolla.

The *Germen* is oblong, and pointed on every side. The *Style* filiform, and the length of the *stamina*. The *Stigma* three-cleft and obtuse.

The *Seed-vessel* a *Capsule*, which is long, obtusely three-sided, pointed with about one cell and three valves.

The *Seeds* are many, joined to a very long, capillary pappus or down.

The Species, with us, but one, viz.

TILLANDSIA usneoides. *Carolinian Tillandsia.*

This is a parasite plant; or growing upon the branches of trees and hanging down with very slender, rough, branching threads or stalks, in manner of moss. The leaves are whitish and hoary.

U L M U S.

The **E L M - T R E E.**

Class 5. Order 2. Pentrandria Digynia.

THE *Empalement* is of one leaf, top-shaped, and wrinkled. The *border* five parted, erect, coloured within, and permanent.

The *Corolla* none.

The *Filaments* five, awl-shaped, and twice the length of the calyx. The *Antheræ* four-furrowed, erect and short.

The *Germen* orbicular and erect. The *Styles* two, shorter than the *stamina* and reflexed. The *Stigmas* downy.

The *Seed-vessel* a *drupe*, oval compressed, membranaceous and juiceless.

The *Seed* one, roundish and lightly compressed.

The Species, with us, are,

I. ULMUS

1. *ULMUS americana.* *American rough leaved Elm-Tree.*

This rises to the height of about thirty feet, with a pretty strong trunk; dividing into many branches, and covered with a lightish coloured rough bark. The leaves are oblong, oval and sharp-pointed, somewhat unequally sawed on their edges, unequal at the base, very rough on their upper surface and hairy underneath. The flowers are produced thick upon the branches, upon short, collected footstalks; and are succeeded by oval, compressed, membranaceous seed-vessels, with entire margins; containing each one oval, compressed seed.

2. *ULMUS mollifolia.* *American soft-leaved Elm.*

This grows to the same size, or perhaps larger than the first kind. The leaves are of an oblong oval, sharp-pointed, unequal at the base, doubly serrated on their edges and hairy underneath: but smooth on the upper surface, of thinner texture and softer than those of the first kind. The seed-vessels are also considerably smaller, end nicked or cleft, and ciliated or fringed on the margin.

VACCINIUM.

WHORTLE-BERRY.

Class 8. Order 1. Octandria Monogynia.

THE *Empalement* is very small, above, and permanent. The *Corolla* is of one petal, bell-shaped, and four-cleft: the divisions turning back.

The *Filaments* are eight, simple. The *Antheræ* two-horned, furnished on the back with two spreading awns, and gaping at the tops.

The

The *Germen* is beneath. The *Style* simple, longer than the *stamina*. The *Stigma* obtuse.

The *Seed-vessel* a berry, globose, umbilicated and four cell'd.

The *Seeds* solitary and small.

Obs. The number of *stamina* are ten, in many of the species.

The Species, with us, are,

* *With annual deciduous leaves.*

1. *VACCINIUM* arboreum. *Winter, or Tree Whortle-Berry.*

This grows naturally in Carolina; rising to the height of ten or fifteen feet, with a pretty strong stem, dividing towards the top into many branches. The fruit is small, ripening late in autumn.

2. *VACCINIUM* album. *Pennsylvanian White Whortle-berry.*

This is a small shrub, rising to the height of about two feet. The leaves are entire, egg-shaped and downy underneath. The flowers are produced at the ends of the branches, standing two or three together upon very short, naked footstalks. The fruit is small and whitish.

3. *VACCINIUM* corymbosum. *Cluster-flowered Vaccinium.*

This grows naturally in swampy or moist places, rising to the height of five or six feet. The leaves are entire, oblong, oval, and somewhat downy underneath. The flowers are produced in clusters or rather one rowed, short, roundish bunches; set pretty close on the small branches. The fruit is of a dark purplish colour when ripe, and of an agreeable acid taste.

There

There are some varieties, I think, of this growing upon higher ground, and of much smaller growth; the leaves of some of which are most slightly and sharply serrated.

4. *VACCINIUM frondosum.* *Leafy Vaccinium, or Indian Gooseberry.*

This grows naturally upon Whortle-berry ground; rising to the height of three or four feet, generally with a leaning, crooked, branching stem. The leaves are entire and of an oval lance shape. The flowers are produced in frondose racemi or bunches, set with small oblong leaves, at the bosom of which the flowers come out, upon pretty long, simple, slender footstalks; they are somewhat bell-shaped, the antheræ are very long, two horned: the horns two cleft. The fruit or berries are oval, and of the size of a small Gooseberry; reddish coloured, soft, succulent, and of a disagreeable taste.

5. *VACCINIUM ligustrinum.* *Privet-leaved Whortleberry.*

This rises to the height of about two or three feet, dividing into small branches. The leaves are small and oblong. The flowers are produced in short racemi, or bunches, which come out alternately, and thick upon the branches; and are naked, or without floral leaves. The berries are round, black and of an agreeable taste.

6. *VACCINIUM stamineum.* *Long-leaved Vaccinium.*

This is also of small growth. The leaves are oblong and very entire. The flowers come out at the bosom of the leaves, upon solitary, slender footstalks, each

each supporting one flower, which is of a spreading bell-shape and five cleft at the border.

*** With evergreen leaves.*

7. *VACCINIUM hispidulum.* *Marsh Vaccinium, or Cranberry.*

This grows naturally in mossy swamps, with slender, creeping stalks, covered with bristly scales. The leaves are oval, or somewhat oblong and shining. The fruit or berries are large and reddish coloured; and of a bitterish acid taste.

8. *VACCINIUM pennsylvanicum.* *Myrtle leaved Vaccinium, or Cranberry.*

The leaves of this are oval and sharp pointed. The flowers are white and nodding, produced from the bosom of the leaves. The berries are red and small,

VIRBURNUM.

PLIANT MEALLY, or WAY-FARING-TREE.

Class 5. Order 3. Pentandria Trigynia.

THE *Empalement* is four-toothed, above, very small and permanent.

The *Corolla* is of one petal, bell-shaped, half five-cleft: the divisions obtuse and reflexed.

The *Filaments* are five, awl-shaped and the length of the corolla. The *Antheræ* roundish.

The *Germen* beneath, roundish. The *Style* none, but in its place a top-shaped *Gland*. The *Stigmas* three.

The *Seed-vessel*, a somewhat oval, compressed berry, of one cell.

The *Seed* one, hard, and of the same form.

The

The Species, with us, are,

1. *VIBURNUM acerifolium.* *Maple-leaved Viburnum.*

This rises generally to the height of four or five feet, with an erect, slender stem, sending off a few opposite branches. The leaves are somewhat three lobed, toothed, or pretty largely sawed on their edges; a little hairy underneath, and joined to round footstalks, placed opposite. The flowers terminate the stalks and branches in *cymæ* (about seven parted) or kind of umbels; they are white and are succeeded by somewhat oval, compressed, black berries when ripe.

2. *VIBURNUM dentatum.* *Toothed-leaved Viburnum,*
or Arrow Wood.

This grows naturally in moist places, rising up with several straight stems, to the height of ten or twelve feet, sending off several slender, opposite branches. The leaves are roundish or oval, pointed, and toothed on their edges, much veined and placed opposite, upon round, downy footstalks. The flowers are produced at the tops of the stalks and branches, in *cymæ* or kind of umbels, about seven parted, in manner of those of the Elder but much smaller; they are white and are succeeded by dark bluish coloured, oblong berries. The young shoots of this tree are generally used by the natives for arrows; whence it is known by the name of Arrow-wood.

3. *VIBURNUM prunifolium.* *Black Haw.*

This I take to be our common, small black Haw; which rises with a stiff stem to the height of about ten or fifteen feet, dividing into many branches,
which

which are generally set pretty thick with short, strong, horizontal spurs or short branches, standing opposite. The bark of the trunk or stem is dark and rough, but of the young branches smooth. The leaves are of an oblong oval, smooth, finely and slightly serrated, and placed opposite upon channelled footstalks. The flowers terminate the branches in four parted *cymæ*; they are white and make a pretty good appearance. The berries are oblong, oval, compressed and black when ripe.

4. *VIBURNUM nudum.* *Tinus leaved, or Swamp Viburnum.*

This grows naturally in moist or swampy places, rising to the height of ten or twelve feet. The bark is smooth and of the young shoots purplish. The leaves are oval, lance-shaped, of a thick consistence and lucid green colour: often slightly serrated, and standing opposite. The flowers are produced in manner of the other kinds and are succeeded by berries of nearly the same size and shape, changing black when ripe.

5. *VIBURNUM Lentago.* *Canadian Viburnum.*

This rises to the height of about ten or twelve feet, covered with a brown bark, and divided into many branches, which, when young, are covered with a smooth purplish bark. The leaves are smooth, oval, slightly sawed on their edges, and stand generally opposite upon short slender footstalks. The flowers are produced in manner of the other kinds and are succeeded by berries of the same shape, and black when ripe.

6. *VIBURNUM alnifolium.* *Alder-leaved Viburnum.*

This grows naturally in Carolina and other parts of America; rising with a shrubby stalk to the height of eight or ten feet, covered with a smooth purplish bark, and divided into several branches. The leaves are heart-shaped, oval, sharp-pointed, deeply sawed on their edges, strongly veined, and placed opposite upon long slender footstalks. The flowers are collected in large cymes or umbels at the ends of the branches, those ranged on the border are male, but the center is filled with hermaphrodite flowers, which are succeeded by pretty large, oval berries, red coloured when ripe.

7. *VIBURNUM triloba.* *Mountain Viburnum.*

This grows naturally upon mountains in the interior parts of Pennsylvania; rising with slender stems to the height of eight or ten feet. The leaves are somewhat like those of the Guelder Rose or Snow-ball tree; they are narrow at the base, but spreading and divided into three sharp-pointed lobes, the middle one largest, longest, and sometimes slightly toothed. The flowers are produced in form of the others, and are succeeded by berries of the same shape, of a pretty large size and red colour when ripe.

V I S C U M.

M I S S E L T O E.

Class 22. Order 4. Dioecia Tetrandria.

* **T**HE *Male* Flowers have their *Empalements*, five-parted; the leaves oval and equal.

They have no petals.

The *Filaments* or rather *Antheræ* are four, oblong and pointed, joined to the leaves of the calyx.

The

* The *Female* have *Empalements*, four leaved: the leaves oval, small, fitting close, deciduous and placed upon the germen. They have no petals.

The *Germen* are oblong, three-sided, their margins crowned, obsolete, four-cleft, and beneath. The *Styles* none. The *Stigmas* obtuse.

The *Seed-vessels* berries, which are globose, smooth, and of one cell.

The *Seeds* single, somewhat heart-shaped, compressed and fleshy.

The Species, with us, are,

1. *Viscum rubrum. Red berried Mistletoe.*

This grows upon the branches of trees and is not found growing in the earth as other plants. It rises with slender woody stalks, several inches in height, spreading and forming a tuft or bush. The leaves are lance-shaped and obtuse. The flowers are produced in spikes from the sides of the stalks, and those of the female are succeeded by roundish red berries, containing each one heart-shaped, compressed seed, surrounded by a tough viscid substance.

2. *Viscum purpureum. Purple-berried Mistletoe.*

This also rises up from the branches of trees like the other. The leaves are inverse-egg-shaped, or oval and narrowed towards the base. The flowers come out in *racemi* or bunches from the sides of the stalks; the female of which are succeeded by berries of a purple colour when ripe.

There is a variety of this with yellow leaves, resembling those of the box; the berries are also produced in bunches and are of a snowy white when ripe.

Mistletoe is most frequently found growing upon the *Nyssa Sylvatica* or Sour Gum, in the middle States, but to the southward upon oaks. It is propagated by birds feeding upon the berries, the seeds
of

of which, sometimes by their glutinosity adhere to the outside of their beaks, and are thus transported to neighbouring trees, and being wiped off upon their branches, stick fast, and germinate, producing new plants. From the berries of Mistletoe, Birdlime was formerly made; but for this purpose those of the common Holly are said to be better. This plant hath been much recommended for the cure of Epilepsies.

V I T I S.

The V I N E.

Class 5. Order 1. Pentandria Monogynia.

THE *Empalement* is five toothed and very small.

The *Petals* are five, rude, small, and falling off.

The *Filaments* are five, awl-shaped, a little spreading, and falling off. The *Antheræ* are simple.

The *Germen* ovate. The *Style* none. The *Stigma* obtuse-headed.

The *Seed-vessel* a berry, roundish, large, and of one cell.

The *Seeds* are five, hard, end-bitten at one end, and contracted at the other.

The Species, with us, are,

1. VITIS arborea. *Carolinian Vine, or Pepper-Tree.*

This grows naturally in Carolina, rising with slender, ligneous, climbing stalks, and fastening themselves by tendrils to any neighbouring support. The leaves are branching and winged, composed generally of two side branches of five leaves each, two of three leaves, and terminating with three; which are small and somewhat toothed. The flowers are produced in loose clusters from the wings of the stalks; they

they are small and white, and are succeeded by small berries of a purplish colour when ripe.

2. VITIS vinifera americana. *American Grape Vine.*

There are many varieties of this, which generally rise up with strong stems, climbing by tendrils or clasps upon neighbouring trees for support, often to the height of thirty or forty feet, and of two, three or four inches in diameter; covered with a dark, rough, loose bark. The leaves are generally heart-shaped and somewhat three lobed; sawed on their edges, and downy or hairy underneath. The grapes are produced in bunches, in form of the European kinds, generally between the size of a Currant and Gooseberry: darkish coloured, or with a light bluish cast, and for the most part of an acid agreeable taste.

3. VITIS vulpina. *Fox-Grape Vine.*

This in manner of growth hath much the appearance of the other kinds. The leaves are generally larger, and smooth, but whitish underneath. The fruit or grapes are about the size of a common cherry and have a strong scent, a little approaching to that of a Fox, whence the name of Fox-grape. There are also varieties of this, some with whitish or reddish fruit which is generally most esteemed, and others with black, of which are our largest grapes.

4. VITIS Labrusca. *Wild American Vine.*

The stems of this have the appearance of our other kinds. The leaves are generally less and of a thinner

thinner texture. The berries or grapes are produced in loose bunches; they are small, and are of several kinds, some reddish, others of a shining black, and some of a bluish colour; all of an acerb disagreeable taste.

5. *VITIS laciniosa.* *Canadian Parsley-leaved Vine.*

The stalks and branches of this resemble the others. The leaves are cut into many slender segments, somewhat in manner of a Parsley-leaf. The grapes are round and white, and are produced in loose bunches; they are late ripe and not very well flavoured.

XANTHOXYLUM,

The TOOTH-ACH TREE.

Class 22. Order 5. Dioecia Pentandria.

*THE Male Flowers have *Empalements* four-parted; the leaves oval, erect and coloured.

They have no *Petals*.

The *Filaments* in each are generally five, awl-shaped, erect and longer than the calyx. The *Antheræ* are twin, roundish and furrowed.

*The Female have *Empalements* as the male.

They have no *Petals*.

The *Germen* in each are generally five, often less, with short footstalks, oval and ending in as many awl-shaped *Styles*.

The *Stigmas* are obtuse.

The *Seed-vessels* are *Capsules*, of the same number with the *germen*, oblong, of one cell and two valves.

The *Seeds* are single, roundish and smooth.

The

The Species, with us,

XANTHOXYLUM fraxinifolium. *Ash-leaved Tooth-ach Tree.*

This grows naturally in Pennsylvania and Maryland; rising with a pretty strong stem to the height of ten or twelve feet; and dividing in many branches, which are covered with a purplish bark, and armed at each bud with two strong, sharp spines. The leaves are composed of four or five pair of lobes, terminated by an odd one; which are entire and of an oblong egg-shape, placed opposite and sitting close to the common footstalk, which is also set with a few spines underneath. The flowers are produced along the branches, upon short collected footstalks; and those of the female are each succeeded, for the most part, with five distinct, oval capsules, joined by short footstalks to the common receptacle, and spreading above; each containing one roundish, smooth seed.

There is said to be another Species, or perhaps Variety, of this in South Carolina, differing in having the lobes of their leaves lance-shaped, sawed on their edges and having footstalks. The bark and capsules are of a hot acrid taste, and are used for easing the tooth-ach, from whence it obtained the name of Tooth-ach Tree: a tincture of them are also much commended for the cure of the Rheumatism.

XANTHORHIZA.

SHRUB YELLOW ROOT.

Class 5. Order 6. Pentandria Polygynia.

THE Empalement none.

The Corolla is of five petals, lance-shaped, pointed and spreading. The

The *Nectarium* crowning the corolla, of five small leaves, somewhat two-lobed: the lobes very small, roundish, or rather runcinate, and inserted by slender claws in the common receptacle, alternating with the petals.

The *Filaments* five, short and thread-form. The *Antheræ* roundish.

The *Germen* several, most frequently from seven to eleven, small and ending in as many awl-shaped, short, incurved *Styles*. The *Stigmas* acute.

The *Seed-vessels* as many *Capsules*; which are small, somewhat oval, compressed, oblique pointed, of one cell and two valves, joined at their base to the common receptacle, and spreading above.

The *Seeds* are single in each cell, small, somewhat ovate and lightly compressed.

Obs. The petals are sometimes six in number. The number of *Stamina* are also sometimes increased.

The Species but one, viz.

XANTHORHIZA simplicissima. *Shurb Yellow Root.*

This is a small shrub, growing naturally in Carolina. The roots are slender and cylindrical, but sending off side shoots by which it spreads much; the wood of which, together with that of the stems, are of a bright yellow colour. The stems are slender, rising to the height of two feet or more, generally simple, or without branches, and covered with a lightish brown bark. The leaves are compound, consisting of two pair of opposite lobes, terminated by an odd one; the lobes are much and deeply cut or cleft on their edges, (somewhat in form of Garden Lovage) and joined to very long, common footstalks, coming out from the tops of the stems. The flowers are produced at the top of the former year's growth, in a compound or paniced *racemus*; having their partial footstalks generally three flowered; they are

are small and purplish coloured, and are succeeded by little heads of small, compressed capsules, each enclosing one small seed. The flowers on the partial or small footstalks, are not produced at once, those that are middle-most or terminal come out first and are hermaphrodite, and generally barren; those on the sides come out later, but one of which is generally fruitful; from whence, I had supposed, some of the flowers were female, and to the contrary of which I am not yet fully convinced.

This shrub, from the yellowness of its roots and stems, it is highly probable, might be employed to good purpose in dying cloaths, &c. It has hitherto been undescribed by Botanical writers, though named in some late Catalogues in honour of M. Marbois; but having imposed the former name, before I had heard of this, have chose to retain it as being expressive of its qualities and appearance.

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INDEX of LATIN GENERIC NAMES.

A CER.	Franklinia.	Potentilla.
Æsculus.	Fraxinus.	Prinos.
Amorpha.	Gaultheria.	Prunus.
Andromeda.	Gleditsia.	Prunus-Cerasus.
Annona.	Glycine.	Prunus-Lauro-Cera-
Aralia.	Guilandina.	sus.
Arbutus.	Halesia.	Ptelea.
Aristolochia.	Hamamelis.	Pyrola.
Ascyrum.	Hedera.	Pyrus-Malus.
Azalea.	Hippophaë.	Quercus.
Baccharis.	Hydrangea.	Rhododendrum.
Berberis.	Hypericum.	Rhus.
Betula.	Ilex.	Rhus-Toxicodendron
Betula-Alnus.	Itea.	Ribes.
Bignonia.	Juglans.	Robinia.
Callicarpa.	Juniperus.	Rosa.
Calycanthus.	Kalmia.	Rubus.
Carpinus.	Laurus.	Salix.
Cassine.	Ledum.	Sambucus.
Ceanothus.	Liquidambar.	Smilax.
Celastrus.	Liriodendrum.	Sorbus.
Celtis.	Lonicera.	Spiræa.
Cephalanthus.	Magnolia.	Staphylæa.
Cercis.	Menispermum.	Stewartia.
Chionanthus.	Mespilus.	Styrax.
Clethra.	Mitchella.	Taxus.
Cornus.	Morus.	Thuya.
Corylus.	Myrica.	Tilia.
Cupressus.	Nyssa.	Tillandsia.
Diospyros.	Olea.	Ulmus.
Dirca.	Philadelphus.	Vaccinium.
Epigæa.	Pinus.	Viburnum.
Euonymus.	Pinus-Abies.	Viscum.
Fagus.	Pinus-Larix.	Vitis.
Fagus-Castanea.	Platanus.	Xanthoxylum.
Fothergilla.	Populus.	Xantherhiza.

INDEX

INDEX of ENGLISH NAMES.

A		Page.			Page.
A	CACIA, false,	133		Buck-Thorn, Sea,	60
	Acacia, three-thorned,	53		Burning bush,	44
	Alder,	19		Button Tree, or Wood,	30
	Allspice, Carolinian,	23		Button Wood, Large	105
	Angelica Tree,	10	C		
	Apple, Custard,	9		Candleberries,	94
	Arbor Vitæ,	151		Catalpa,	21
	Arbutus, Trailing,	42		Cedar, Red	70
	Arrow Wood,	160		Cedar, White	39
	Ash,	50		Cherry Wild, or Bird,	112
	Ash, Mountain,	144		Cherry, Dwarf,	81
	Ash, Poison,	130		Chestnut,	46
	Asp, or Aspen Tree,	107		Chestnut, Horse	4
	Azarole,	88		Chinquopin,	47
				Cinquefoil,	108
B				Cistus, Marsh	75
	Balm of Gilead Fir,	102		Coffee, Kentucky,	56
	Balsam Tree,	107		Cornel Tree,	34
	Barberry,	17		Cotton Tree, Carolinian	106
	Bay,	72		Crab Tree,	118
	Bay, Dwarf Rose,	126		Cranberries,	159
	Bay, Sweet flowering,	83		Creeper, Virginian	59
	Bean Tree, Kidney,	54		Cross Vine,	21
	Bear-berries,	11		Cucumber Tree,	83
	Beech,	45		Currants,	131
	Bell Tree, Silver,	57		Custard Apple,	9
	Benjamin Tree,	73		Cypress,	38
	Berry, Winter,	109	D		
	Bilberry,	156		Date Plumb,	40
	Bindweed, Rough,	142		Dewberry Bush,	137
	Birch,	18		Dogberry,	34
	Bird Cherry,	112		Dog Wood,	35
	Birthwort,	12	E		
	Black-berry.	137		Elder,	140
	Bladder-Nut,	147		Elm,	155
	Bonduc,	56		Euonymus, Climing,	28
	Briar,	136			Fern,
	Briar, Green,	142			

F

	Page.
Fern, Sweet,	77
Fir,	102
Fox Grape,	165
Fringe Tree,	32

G

Gale, Bog,	95
Gale, Spleenwort-leaved,	77
Gilead, Balm of,	102
Gooseberry,	132
Gooseberry, Indian,	158
Grape,	165
Groundsel Tree,	116
Gum, Sour,	97
Gum, Sweet,	76

H

Hawthorn, or Haw,	87
Haw, Black,	160
Hazel,	36
Hazel, Witch,	58
Hemlock Spruce,	103
Hep-Tree,	135
Hickory,	68
Holly,	63
Honey Locust,	53
Honey-suckle,	79
Honey-suckle, Upright,	14
Horn-beam,	24
Horse Chesnut,	4

I

Jasmine, Yellow,	22
Jersey Tea,	27
Indian Arrow Wood,	160
Indian Pipe-Shank,	147
Ink-Berry,	109
Indigo, Bastard,	5
Johnsonia,	22
Iron Wood, Carolinian,	9
Judas-Tree,	31
Ivy,	59

K

	Page.
Kidney Bean Tree,	54

L

Laurel, American,	71
Laurel, Mountain,	127
Leather Wood,	41
Lime, or Linden Tree,	153
Lime, Ogeche,	97
Locust Tree,	133
Locust Tree, Honey,	53

M

Maple,	1
Meally Tree, Pliant,	159
Medlar,	87
Miffeltoe,	162
Mock Orange,	99
Moon-feed,	85
Moss-berries,	159
Mountain Tea,	52
Mulberry Tree,	93
Myrtle, Candleberry,	94

N

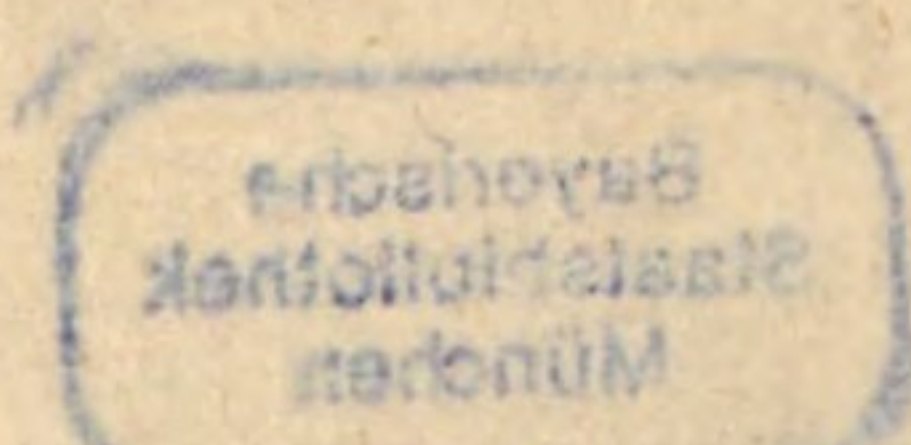
Nettle Tree,	29
Nickar Tree,	56
Nine-Bark,	146
Nut, Bladder,	147
Nut, Hazel,	36

O

Oak,	118
Oak, Poison,	131
Olive,	98
Orange, Mock,	99

P

Papaw-Tree,	9
Paragua Tea,	26
Pavia,	



	Page.		Page.
Pavia,	5	Staff Tree,	28
Pepper-Tree,	164	Stag's-horn-Tree,	129
Perfimmon Tree,	40	Storax Tree,	149
Pig-nut,	68	Storax, Liquid	77
Pine Tree,	100	Sugar Tree.	4
Pipe-shank, Indian	147	Sumach,	127
Plane Tree,	104	Sweet Gum,	76
Pliant Meally Tree,	159		
Plowman's Spikenard,	16	T	
Plumb Tree,	110	Tacamahac Tree,	107
Plumb, Indian Date	40	Tea, New-Jersey	27
Poison Ash,	130	Tea, Mountain,	52
Poison Sumach,	130	Tea, South Sea	26
Poison Oak,	131	Thorn, Black	160
Poison Vine,	131	Thorn, White	88
Poplar,	105	Tooth-ach Tree,	166
Poplar, (<i>commonly so called</i>)	78	Trefoil, Shrub	114
		Tree of Life,	151
Q		Trumpet flower,	20
Quickbeam,	144	Tulip Tree,	78
		Tulip Tree, Laurel-leaved	82
R		Tupelo Tree,	95
Raspberry,	136		
Red-bud,	31	U	
Red-buds,	8	Umbrella-Tree,	84
Red-Rod,	36		
Red-Root,	27	V	
Rose,	135	Vine,	164
Rose Bay, Dwarf	126	Vine, Climing five-leaved	59
Rosemary, Wild	75	Vine, Poison	131
		W	
S		Walnut,	65
Saint John's-Wort,	62	Way-faring Tree,	159
Saint Peter's-Wort,	13	Whortle Berry,	156
Sassafras,	74	Willow Tree,	139
Sassafras, Swamp	83	Winter Green,	115
Service Tree,	144	Witch Hazel,	58
Service Tree, Wild	38-90		
Snow-drop Tree,	32	Y	
Sorrel-Tree,	7	Yellow Root,	167
Sour Gum,	97	Yew,	150
Spice Wood,	73	Yapon,	26
Spindle Tree,	43		

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

Q

Quadrant

R

Radiant

Radiation

Radiometer

Radiography

Radiology

Radiant Energy

Radiant Heat

Radiant Light

Radiant Power

Radiant Flux

Radiant Intensity

Radiant Density

Radiant Pressure

Radiant Temperature

Radiant Entropy

Radiant Entropy Density

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Radiant Entropy Production Rate Density

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Radiant Entropy Production Rate Flux Density

S

Solar

Solar Constant

Solar Radiation

Solar Irradiance

Solar Flux

Solar Power

Solar Energy

Solar Entropy

Solar Entropy Density

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Solar Entropy Flux Density

Solar Entropy Production

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Solar Entropy Production Flux

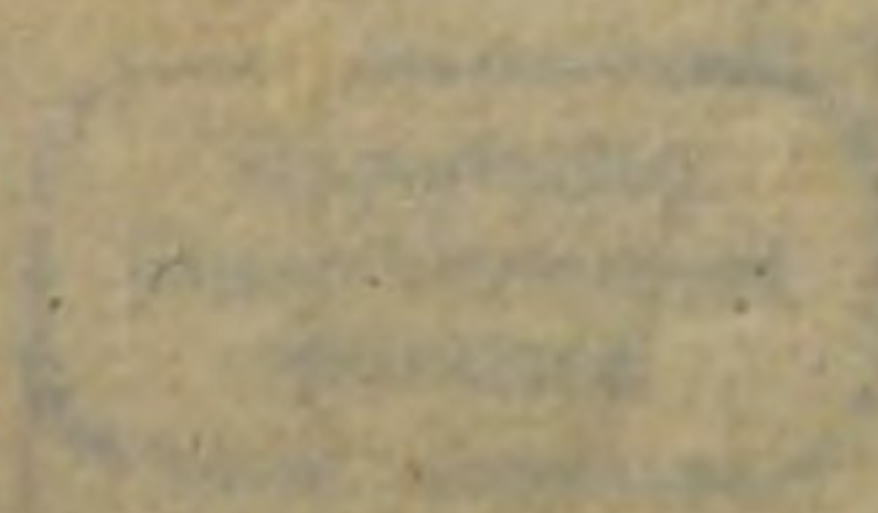
Solar Entropy Production Flux Density

Solar Entropy Production Rate

Solar Entropy Production Rate Density

Solar Entropy Production Rate Flux

Solar Entropy Production Rate Flux Density



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